V643

Price One Shilling Net,
or 25 Cents.

March, 1913.

LIBRARY
RECEIVED
MAR 19 1913

# THE VETERINARY JOURNAL

## A Monthly Review of Veterinary Science.

**Editors for Great Britain and Ireland:—**

FREDERICK HOBDAY, F.R.C.V.S., F.R.S.E.,
FORMERLY PROFESSOR IN THE ROYAL VETERINARY COLLEGE, LONDON.

GEO. H. WOOLDRIDGE, F.R.C.V.S., M.R.I.A.
PROFESSOR OF VETERINARY MEDICINE, PARASITOLOGY AND HYGIENE, IN THE ROYAL VETERINARY COLLEGE, LONDON.

**Annual Subscription for the British Empire, 12s. Post Free; for the United States, $3.00.**

LONDON.
BAILLIÈRE, TINDALL & COX,
8, HENRIETTA STREET, COVENT GARDEN.

AUSTRALIA AND NEW ZEALAND.
Messrs. GORDON & GOTCH, Ltd.,
Melbourne, Sydney, Wellington, &c.

NEW YORK:
W. R. JENKINS,
851 and 853, Sixth Avenue.

CHICAGO:
ALEXANDER EGER,
132, West Lake Street.

*Entered as Second-Class Matter in the U.S. Post.*

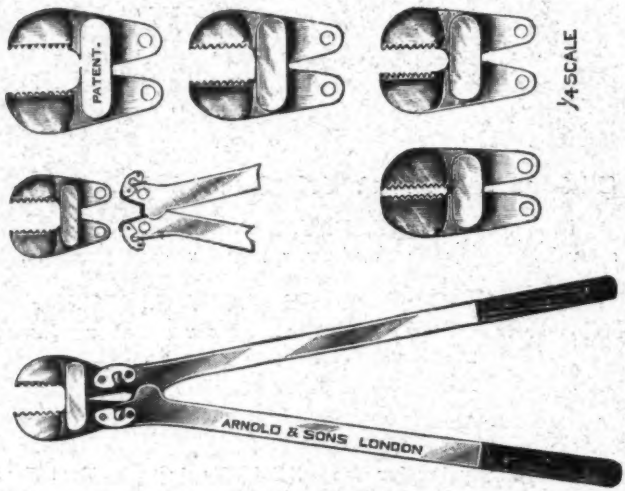
No. 453. Vol. 69.

# "ARNOLD'S"

# Patent Molar Tooth Cutter,

**WITH REMOVABLE CUTTING BLADES**
**—— OF DIFFERENT WIDTHS. ——**

**The lightest, most powerful and reliable cutter ever brought before the notice of the profession.**




## PRICES.

With 1 Cutting Blade ... ... ... ... **£3 0 0**
Extra Blades, 17/6 each.
With 4 Cutting Blades of different widths ... **£5 12 6**

## ARNOLD & SONS,

**Veterinary Instrument Manufacturers,**

GILTSPUR STREET, LONDON, E.C.

Telegraphic Address:
INSTRUMENTS, LONDON.

Telephone Number
City 5240 (3 lines).

# CONTENTS.


| | PAGE |
|---|---|
| MATTHEW HEDLEY, F.R.C.V.S. ... ... ... ... ... ... ... | 99 |
| EDITORIAL— | |
| Veterinary Inspectors' Fees ... ... ... ... .. ... ... | 101 |
| GENERAL ARTICLES— | |
| On Sarcosporidiosis (*Sarcocystis tenella*) in Sheep in Scotland. By J. P. McGOWAN and T. RETTIE ... ... ... ... ... ... ... ... | 102 |
| Hæmorrhagic Septicæmia in the Sheep in Scotland. By J. P. McGOWAN and T. RETTIE ... ... ... ... ... ... ... ... ... | 104 |
| About Acarina—their Habits, Hosts, Practical Methods of Examination for, and Life History. By THOS. B. GOODALL, F.R.C.V.S., F.L.S. ... | 107 |
| Concerning Anatomical Nomenclature. By SEPTIMUS SISSON, S.B., V.S. ... | 112 |
| Further Note on a Gastrodisc (?) from an Indian Zebu. By S. N. MITTER... | 117 |
| CLINICAL ARTICLES— | |
| Ectopia in a Calf. By E. LYNE DIXSON, M.R.C.V.S. ... ... ... | 118 |
| Ovariotomy in a Mare complicated by Aneurism of the Posterior Aorta. By A. R. ROUTLEDGE, F.R.C.V.S. ... ... ... ... ... ... | 119 |
| Thrombosis of the Right External Iliac Artery. By J. F. D. TUTT ... ... | 119 |
| Three Interesting Cryptorchid Cases. By FREDERICK HOBDAY, F.R.C.V.S. | 120 |
| The Operative Treatment of Capped Knee in Cattle. By Dr. A. SALVISBERG | 124 |
| A Case of Complete Left-sided Facial Paralysis. By Staff Veterinary-Surgeon KLINGBERG ... ... ... ... ... ... ... ... ... ... | 126 |
| Epithelioma on the Tongue of a Horse. By Chief Veterinary-Surgeon Dr. KETTNER ... ... ... ... ... ... ... ... ... ... | 127 |
| A New Treatment of Roaring. By H. A. VERMEULEN ... ... ... | 128 |
| Pruritus Cutaneus, Itching of the Skin of the Horse, and its Treatment. By Chief Veterinary-Surgeon GAUSSELMANN ... ... ... ... ... | 128 |
| CANINE CLINICALS— | |
| Vesical and Renal Calculi. By ARTHUR PAYNE, F.R.C.V.S. ... ... | 130 |
| A New Treatment for Certain Forms of Canine Stifle-Joint Lameness. By ARTHUR PAYNE, F.R.C.V.S. ... ... ... ... ... ... | 131 |
| Prostatitis with an Unusual Cyst in a Dog, complicated with Nephritis. By GEO. H. WOOLDRIDGE, F.R.C.V.S., M.R.I.A. ... ... ... ... | 133 |
| UNIVERSITY OF LONDON ... ... ... ... ... ... ... | 135 |
| ABSTRACT— | |
| The Agglutination and Complement Fixation Reactions in Animals Experimentally Inoculated with Jöhne's Bacillus, with Special Reference to the Relation of this Bacillus to the other Acid-fast Bacilli. By C. C. TWORT, M.B., Ch.B. ... ... ... ... ... ... ... ... ... | 136 |
| REVIEWS ... ... ... ... ... ... ... ... ... ... ... | 140 |
| TRANSLATION— | |
| Two Cases of General Paralysis in the Dog ... ... ... ... ... | 144 |
| LETTERS AND COMMUNICATIONS, &c. ... ... ... ... ... | 148 |
| BOOKS AND PERIODICALS, &c., RECEIVED ... ... ... ... | 148 |

**JAMES SWIFT & SON,**

**OPTICAL AND SCIENTIFIC INSTRUMENT MAKERS,**

*Contractors to all Scientific Departments of H.M. Government.*

**Grands Prix, Diplomas of Honour, and Gold Medals at London, Paris, Brussels, &c.**

**NEW MODEL "I.M.S." MICROSCOPE**

*(As supplied to the Army Veterinary Department, War Office).*

**Specially designed for Bacteriology and Hæmatology.**

**With Improved Fine Adjustment and Mechanical Stage.**

Fitted with $\frac{2}{3}$ in., $\frac{1}{6}$ in., and $\frac{1}{12}$ in. (Oil Immersion) Objectives, Oculars, Triple Dust-proof Nosepiece, Abbe Condenser, Iris Diaphragm, Special Mechanical Stage, &c., in Cabinet, **£23**.

*Catalogue gratis on application.*

**UNIVERSITY OPTICAL WORKS,**

**81, TOTTENHAM COURT ROAD, LONDON, W.**

# New Instruments for the Roaring Operation.

**Literature:** Recueil de Médecine Vétérinaire (Alfort),

American Veterinary Review

AND

Berliner Tieraerztliche Wochenschrift
1912, No. 29, page 530.

FIG. 1.

FIG. 2

| | £ | s. | d. |
|---|---|---|---|
| Fig. 1.: COOK'S CURETTE .. | 0 | 6 | 8 |
| Fig. 2.: WILLIAMS' BUER .. | 0 | 5 | 6 |
| WILLIAMS' ROARING DILATOR | 1 | 17 | 6 |

SOLD BY

**A. FAVRE & CO., 21, Mincing Lane, London, E.C.**

**Sole Agents for H. HAUPTNER, Berlin.**

**Veterinary Instrument Manufacturer,**

Specialities for Breeding purposes and General Farriery. Teaching Supplies.
Correspondence is solicited, and all enquiries will be promptly attended to. Hauptner's Catalogue, 1907, English Edition, sent upon application.

# VERGOTININE

FOR

## BROKEN WINDED HORSES

**And BRONCHITIS GLANDON, PERSISTENT COUGH, CHRONIC CATARRH, &c.**

PREPARED BY
A. VELPRY, Boulogne-on-Seine
FRANCE.

**CURE GUARANTEED IN ONE MONTH**

**Price 6s.**

*USUAL DISCOUNT* **30%** *TO VETERINARIANS.*

**General Agents for Great Britain and Ireland:—**

**C. H. HUISH & Co., 12, Red Lion Square, London, W.C.**

## FOALING SEASON.

**VACANCIES FOR AGENTS** in unrepresented districts for the **Imperial Accident Insurance Co., Ltd.** Established 1878. Horses Insured against Death from Accident or Disease; Mares for Foaling and Loss of Foals; Hunters and Stallions Insured against Death or Disablement. Claims paid, £500,000. Address, AGENCY MANAGER, 17, Pall Mall East, London, S.W.

MATTHEW HEDLEY, F.R.C.V.S.

LATE CHIEF VETERINARY INSPECTOR TO THE DEPARTMENT OF AGRICULTURE IN IRELAND.

THE

# VETERINARY JOURNAL

MARCH, 1913.

## MATTHEW HEDLEY, F.R.C.V.S.

THE veterinary profession is much poorer for the loss of Matthew Hedley, Fellow of the Royal College of Veterinary Surgeons, who died on January 31, at Dublin, at the age of 60 years. Mr. Hedley belonged to a family of veterinary surgeons. He was born and brought up in Durham, and apprenticed to his uncle there, with whom he served a pupilage extending beyond the usual time. He had another uncle who practised in Kent. He studied at the Royal Veterinary College in London, from which he graduated with very great credit, having occupied a high place in his classes and gaining the Coleman medal. He qualified as M.R.C.V.S. in 1877 and took his Fellowship degree in 1882. In 1877 he was appointed Veterinary Inspector at Stranraer under the Veterinary Department of the Town Council under Sir George Brown. In 1878 he was appointed to Ireland under the Irish Privy Council, which at that time, and until the creation of the Department of Agriculture, administered the Diseases of Animals Acts. At that time Professor Ferguson was Veterinary Adviser to the Lord Lieutenant under the Privy Council. On Professor Ferguson's retirement in 1888 Mr. Hedley was made Chief Inspector. His earliest experience, as well as his last, of a serious epizootic was with foot-and-mouth disease. Under his administration pleuro-pneumonia was eradicated and rabies became a thing of the past. Glanders, which re-appeared during the last decade, was stamped out, and Ireland claimed until recently to be free of scheduled epizootic diseases, save for the ever-present swine fever and anthrax. He also was instrumental in stamping out epizootic lymphangitis. He had largely the gift of organization and administration, and to the organization of his branch of the Department the successful handling of the recent outbreak is mainly due.

For many years he was an active member of the Royal Dublin Society, and took part in their shows at Ballsbridge. He was a Vice-President of the Board of Governors of the Royal Veterinary College of Ireland, and took an active part with Sir C. J. Nixon, Bart., in founding that Institution. He was for many years Treasurer of the Veterinary Medical Association of Ireland, and was their President during the years 1899-1901. He was President of the National Veterinary Association at its first visit to Ireland in 1900, and local Secretary at its second visit in 1904. Through Mr. Hedley's arrangements, with the assistance of Sir Charles Cameron in 1898, the veterinary section was instituted at the Dublin meeting of the Royal Institute of Public Health, and made the most favourable impression on the public. Mr. Hedley was a member of more than one Masonic Lodge. He entered Freemasonry in the year 1895. He was a Past-Master in Craft Masonry. He had also passed the chair in Royal Arch Masonry, and was a member of the Knights Templars. He was elected and appointed to represent the Grand Lodge of Louisiana last year, but died before being installed in Grand Lodge. He resigned membership of his mother lodge in 1912, having previously affiliated with Lodge 388, of which lodge he was one of the founders. He was always an active and energetic Freemason, and at the time of his decease was Registrar of Royal Arch Chapter 6.

Mr. Hedley served for a term on the Council of the Royal College of Veterinary Surgeons, being elected in 1892. His hobbies included stamp collecting and amateur photography. He was Secretary of the Royal Photographic Society for several years. He also took up miniature rifle shooting. He was never robust; persistent ill-health extending over many years undermined his constitution. He became so ill in September last that he had to apply for and was granted a period of leave; unfortunately, however, he was never able to return to his duties.

A very large and representative assembly followed him to the grave, including a large number of members of his profession, also members of the Masonic body, who paid him the last Masonic tribute. All his friends and acquaintances, and they are many, offer their sympathetic condolences to his wife and family. He left two sons, one an analytical chemist in South Africa, and the other a dentist in practice in Kent, also a daughter unmarried.

# Editorial.

## VETERINARY INSPECTORS' FEES.

THE fees paid to veterinary inspectors by the various authorities administering the Contagious Diseases (Animals) Acts have long caused great discontent amongst inspectors employed by local authorities on account of their being really inadequate. In fact, in many cases local inspectors have only sought or retained their positions because they carry with them a certain local standing. But that is no reason why professional men should not be reasonably paid for their services. Many of our readers are already aware of the fact, and we have previously referred to it, that the National Veterinary Medical Association has, through its Council, been giving very thorough and earnest attention to the matter through the initiative of the South-Eastern Veterinary Association. The Council has now adopted a schedule moulded on the Kent scheme for recommendation to the local societies, who must be responsible for carrying it through in their own areas if they wish for it. In some districts inspectors are reasonably paid and are content with their fees, and it is not suggested that they should sow any seeds of discord in their districts by asking for alterations. In other districts, however, the conditions are ludicrously low and absurd, such as Banff, where a veterinary inspector is paid half-a-crown for a visit, and cannot charge mileage for any distance under three miles, and any amount lodged must be sworn to. In such districts, when one asks for improved conditions, one is asked: "How much do you want?" and "What do other authorities pay?" and if one is not prepared with a schedule the whole question is shelved.

It is improbable that the whole schedule will be accepted as it stands by all local authorities, but it offers an excellent basis for negotiation and compromise. As local conditions vary, so must the negotiations be left in the hands of the local societies, each of which should appoint a small committee to make the necessary representations to the powers that be. Their hands will be materially strengthened by the knowledge that they are backed by the whole profession through the National Veterinary Medical Association.

Veterinary inspectors have now got a good lead, and it remains to be seen whether they are willing to follow it and do anything for themselves. The complete success that has been attained by the veterinary inspectors to the County of Kent should instil courage into the most faint-hearted. If improvements of remuneration are not asked for they certainly will not be offered.

# General Articles.

## ON SARCOSPORIDIOSIS (*SARCOCYSTIS TENELLA*) IN SHEEP IN SCOTLAND.*

*(Preliminary Note.)*

By J. P. McGOWAN and T. RETTIE.

We have examined four sheep sent to us from the Scottish border and said to be suffering from "scrapie." On three of them comparatively few observations were made during life, but a careful *post-mortem* was done. The fourth, however, was kept under close observation during life, and a thorough *post-mortem* examination was made when the animal was killed. This last animal during life showed the usually recognized symptoms of "scrapie"—namely, great emaciation, pruritus (wool rubbed off and ulcers on nose, top of head and legs; bare callosities at root of tail and on either side of it; attempting to bite the hand used to pinch its side; rubbing against walls, fences, &c.); bleaching of wool over back; and persistence of appetite. A secondary anæmia was present. The temperature varied within the limits normal to the sheep, 39° to 40° C.

*Post-mortems* on the above-noted animals revealed to the naked eye nothing in most cases except strongylosis of the lung and alimentary canal. The only lesion in common to all the animals was a marked sarcosporidiosis, which was not detected by the naked eye, but was first noticed on microscopic examination of the muscles. The last case noted above was most thoroughly examined, and pieces were taken from muscles all over the body. The sarcosporidia were looked for by teasing a small piece of the muscle on a slide and examining it with the low power. Sarcosporidial cysts were easily found *in the first piece examined* of muscles from the following situations: panniculus carnosus, jaw muscles, facial muscles, tongue muscles, pharyngeal muscles, laryngeal muscles, deep and superficial muscles of neck (back and front), œsophagus, muscles of scapulæ, of fore legs, intercostals, vertebral muscles, heart, diaphragm, muscles of wall of abdomen, and muscles of pelvis and lower limbs. About a hundred pieces of muscle in all were examined.

* Published in the *Proceedings of the Pathological Society of Great Britain and Ireland* for January, 1913.

Sarcosporidial cysts were not found in non-striped muscle fibres, *i.e.*, wall of alimentary canal, the uterus or vagina. In none of the sheep were there any macroscopic sarcosporidial lesions in the œsophagus.

Acid-fast bacilli (Jöhne's bacillus, &c.), although carefully sought for, were not found in any part of the intestinal canal or mesenteric glands. The central nervous system, the posterior root ganglia, the peripheral nerves, and the skin were examined microscopically, and nothing abnormal observed except inflammatory thickening of the skin.

Sarcosporidiosis as a lesion is well known in sheep. We ourselves have found it in Scotland in sheep other than those suffering from "scrapie." So far as we can find, however, there is nothing in the literature regarding the clinical symptoms produced in sheep by sarcosporidiosis, if we accept the single observation of Moule, who states that in a hundred "cachectic" sheep he found 98 per cent. heavily infected with sarcosporidia, while in a hundred ordinary sheep he observed sarcosporidiosis in only forty-four, and there in small amount. Minchin, quoting Wasielewski, states that sarcosporidiosis shows itself in swine by paralysis of the hind-quarters, a skin eruption, and general symptoms.

Taking into consideration the fact that in each of the four cases examined sarcosporidiosis was present, and that in each we had the opportunity of making a most complete examination—it was not only the only lesion present, but one distributed through the whole body —we put forward, as a suggestion for future work, that the disease "scrapie" may be a syndrome that appears when a sheep is dying of a mass infection with *Sarcocystis tenella*. The sarcosporidiosis may not be necessarily fatal in itself during the economic life of the sheep, but in certain individuals, owing to mass infection, it may assume a fatal character. The pruritus might be explained either by the toxin of the sarcocyst ("sarcocystine" is the only toxin so far isolated from a protozoan) acting on the central nervous system, or by the presence of the cysts in the muscle fibres causing a constant stimulation of the reflex, or by their presence causing an uneasiness in the muscle and inducing the animal to rub.

---

# HÆMORRHAGIC SEPTICÆMIA IN THE SHEEP IN SCOTLAND.*

By J. P. McGOWAN and T. RETTIE.

In October of last year one of us (J. P. McG.) was asked to investigate a disease which had during the months of August and September caused the death of forty lambs (out of 500) which were feeding on foggage. One of these lambs was by good luck obtained at the moment of death. *Post-mortem :* On skinning, it showed hæmorrhages over all the muscles of the body, especially on the thorax, hæmorrhages on all the serous membranes, effusion into the pericardium (blood stained), innumerable hæmorrhages on the surface of the heart, and hæmorrhages into the wall of the stomach. The animal was very fat. Apart from the hæmorrhages, the only other abnormal thing of note found was acute bronchitis. The spleen was not enlarged, but contained hæmorrhages. The kidneys even so soon after death were very soft. There was no fœtid smell (the animal was just dead). *Cultures* made from the lungs gave a rich and pure growth of the organism of hæmorrhagic septicæmia. One c.c. of the heart blood put into an agar slope and spread over the surface gave about a dozen colonies of the same organism in pure state, thus showing a relative infrequency of the organism in the circulating blood. The organism gave all the recognized microscopical (pleomorphism well marked) and cultural reactions of the organism of hæmorrhagic septicæmia. It was lethal when injected intraperitoneally to rabbits, guinea-pigs, rats and mice, killing them within twenty-four hours or even less. Hens were very resistant. The virulence was markedly raised for rabbits by passage ; and the heart lesions of the original sheep could be exactly reproduced in the rabbit. After the organism had been subcultured on artificial media for three weeks with several passages through rabbits, to keep up its virulence, three sheep were inoculated with it and all died within less than two days. The temperature of one of them was taken about twelve hours after inoculation, and it was found to be 107° F. The animals showed *post-mortem* practically the lesions found in the original sheep (with the exception of putrefactive changes to be afterwards mentioned).

* Published in the *Proceedings of the Pathological Society of Great Britain and Ireland* for January, 1913.

We will give as an example the details of the experiment in the case of one sheep. A cross dinmont, very fat and healthy, was inoculated subcutaneously into the groin with one forty-eight hours' agar culture of the organism taken from the heart blood of a rabbit which had been inoculated the day previous to its death. This culture was tested for its purity, found to be pure, and gave the reactions of the organism as originally isolated from the sheep. This sheep was inoculated at three o'clock in the afternoon, and was found dead but warm by the shepherd next morning at 8 a.m. The inoculations were carried out on a farm fourteen miles from Edinburgh, where no disease of the kind was known or had been known. The *post-mortem* could not be done till twelve o'clock, some time thus elapsing between death and the time of the examination. The abdomen was much distended and the legs were sticking straight out (owing to the distension), blood-stained froth was coming from the nostrils, and gas was escaping from the anus. There was no external evidence of diarrhœa, such as dirty tail. The animal was very fat. At the site of inoculation into the groin there was slight œdema and congestion. It was, however, no more marked than in the groin of the opposite side. There were numerous hæmorrhages, especially on the walls of the thorax, and the superficial vessels were full of blood. The right lung was œdematous. The upper lobe of the left lung was like a solid blood clot, and the anterior part of the lower lobe was in the same condition. The rest of the left lung was œdematous. There were 2 to 3 oz. of blood-stained fluid in each pleural sac. There was excess of pericardial fluid, which was slightly blood stained. There were a large number of hæmorrhages on the surface and in the substance of the heart. The abdomen was very tense, and on incision being made through the abdominal wall the omentum and intestines bulged out. There was no gas in the peritoneal cavity and no hæmorrhages on the peritoneum. There was a large amount of sanguinolent serum in the peritoneum. The spleen was not enlarged. The liver was firm, but the kidneys were very soft. The rumen was half filled with frothing grass, and blown up tight with gas. The mucous membrane came off in large flakes, showing a congested reddened surface below. The fourth stomach when looked at from the outside showed a very large number of blue plum-coloured spots. The intestines showed some small hæmorrhages and were empty of fæces.

On opening the abdomen, and more especially when the

compartments of the stomach were opened, a very fœtid odour (which clung to the hands for days) was given off. Films made from the pleural fluid showed no organisms of any kind, but culture showed the presence of the organism of hæmorrhagic septicæmia and a large rod-shaped organism which was completely anaerobic. The same condition was found in the heart blood. The peritoneal fluid showed the anaerobe in pure condition in films and cultures. Films made from the surface of the fourth stomach showed what appeared to be a pure extensive growth of the anaerobe. Section of the hæmorrhagic patches on the fourth stomach wall showed them to be simply hæmorrhages without any inflammatory reaction. Nevertheless, one sees the large rods right through the thickness from epithelial to peritoneal surface.

In certain investigations in the field during last summer we frequently came across lambs, at the time when they were beginning to eat grass, which had not been seen ailing during life and which had been "found dead." They were very fat lambs and *post-mortem* showed the appearance just described. At this period, however, we never came across one sufficiently non-putrescent to encourage us to examine it bacteriologically. The shepherds invariably called the disease "braxy" or "grass-sickness," and it was recognized by them as a definite clinical entity.

Pasteurellosis is well known as the cause of great loss in France, where it affects chiefly fat lambs and hogs, and there is no doubt the lamb which we originally investigated died from this condition. The chief interest of our investigation centres round the fact that the disease produced by the organism isolated from it, while from the standpoint of morbid anatomy identical with that in the original animal, presented in addition an outstanding characteristic, namely the smell, of another disease—"braxy." There is the further significant fact that, associated with the organism of hæmorrhagic septicæmia, there were in these cases anaerobic rods similar to those described by Hamilton and Nielsen in "braxy." Titze and Weichel some time ago brought forward experimental evidence that Nielsen and Hamilton's organism was of a putrefactive character, and we believe that such a view is sufficient to account for the differences observed, *post mortem*, in our original case of pasteurellosis, and those found in the experimental animals.

It is to be noted that the *post-mortem* descriptions of "braxy" closely correspond with those of pasteurellosis (the gastric hæmor-

rhages, for instance, having led Nielsen to denominate the disease "gastromycosis ovis"). We therefore put forward the suggestion that some, at any rate, of the cases which go by the name of "braxy" may in reality be cases of pasteurellosis.

---

## ABOUT ACARINA—THEIR HABITS, HOSTS, PRACTICAL METHODS OF EXAMINATION FOR, AND LIFE HISTORY.

By THOS. B. GOODALL, F.R.C.V.S., F.L.S.

*Christchurch, Hants.*

I HAVE been engaged for several years in making a collection of the acarina or mites. Before starting on my last trip abroad, I was desirous to place the collection in safe keeping, and where it would be likely to be of some use, and it was with a feeling of satisfaction that, through the agency of the Linnæan Society, I was enabled to hand it over to Professor Nuttall, who very kindly accepted it for the Museum of the Research Laboratory, Cambridge.

The very fact of searching for and collecting these specimens, some of them unique, led, almost of necessity, to the taking of copious notes, especially of such facts as one failed to find in published works on the subject, and it is a summary of such parts of these notes as I think might be of interest, and possibly of use, to your readers, that I now offer for publication.

It would, perhaps, be as well at the commencement of these notes to say a few words as to what I have found to be the best methods of taking acarina.

A few months ago, at a meeting of the Royal Counties' Veterinary Medical Society, at the Board of Agriculture Laboratory, at Alperton, Professor Stockman gave a demonstration of an elaborate but somewhat complicated method of searching for *Psoroptes ovis* in cases of suspected sheep scab! A scraping of the epidermis was treated with strong liquor potassæ and rubbed down in a mortar with a pestle, washed, and passed through a centrifugal instrument, and the sediment placed under a low power of the microscope—the liquor potassæ would dissolve out all the fat and grease, but it would have no effect on

the hard, chitonous parts of the psoropt, which could be identified under the microscope.

I quite agree that this might be an excellent method in the laboratory, but in the field, or in the case of the general practitioner, I think I can suggest a much more simple plan, one that I have practised for many years, and that I have never known to fail.

In the case of our domestic animals, scrapings of epidermis of animals suspected of being affected by either of the parasitic acarina should be placed in a glass-top box, the bottom of which has been previously lined with blue paper, and with every precaution taken against any escape the box should be placed in the waistcoat pocket (I have one specially made) with the glass towards the body. In a very short time, half an hour to an hour generally, the sarcopts (I am using this term in a general sense), if there are any present, will draw towards the warmth of the body, and can then be easily seen on the glass lid of the box; here they can be identified with a pocket magnifier, and can be transferred without much difficulty to the glass slide for the microscope. For their reception here, I place a drop of Canada balsam in xylol, and with two fine needles placed in handles, taking the parasite up with one, and working it off with the other, they are dropped on to the balsam. The one drawback to this method is that details such as small "setæ" become transparent, and I have sometimes had recourse to glycerine as the mounting agent. Or to study details, a ring of pure Canada balsam is made, the parasites placed in it, a cover glass applied, and before this settles on to the parasites their exact structures and movements can be recorded, and the great advantage of this method is, that the acari generally come into good positions as the balsam closes over them.

To obtain specimens of the acarina from small birds or mammals, I lay the dead bodies on a piece of blue paper, and in a variable time, half an hour with some, and as long as twenty-four hours or more with others, the acari, if there are any, leave the body of the host and come out to the extremities of the hairs or feathers, where they remain for a little time, and from whence, with two fine needles, as described above, they can be transferred to the glass slide for the microscope.

At a later stage they leave the host and will be seen crawling

over the blue paper—they would not be detected on white—and here they can be captured.

I may say, in passing, that we more often than not find some kind or other of the louse mites or others on these small animals if they are treated in this way.

I wish my readers to make special note of this, I consider it of very great importance indeed: many animals, not only small birds and mammals, may be affected with parasitic acarina without giving evidence of their presence during life, but which leave the bodies of their hosts immediately after death. I shall allude to this in my later notes, but I wish to draw attention to the fact here, and further, that unless conveyed by a brush or some such instrument these parasitic acari are slow to leave the skin of one host for that of another during the life of the bearing host; but, this is the important point, *immediately after death* they swarm away from the dead host and seek another, where, once established, they propagate at a tremendous rate. So that when an affected animal is slaughtered it should never be done in the stable or house, or near where others are likely to go, and it would be as well to bear in mind the possibility of our friend, the rat, being a possible carrier of this, as of other diseases, but a deep grave should first be dug, and the animal destroyed, and rolled directly into the grave and covered.

Of course, if a "mangy" rat dies, or is killed, in or near a stable and its body is allowed to remain unburied or unburnt for a few hours, the parasites soon leave their dead host and attack the first they find—a horse; and so *vice versâ*, if the body of a "mangy" horse is not disposed of immediately after death the parasites leave it and attack the first host they find, another horse, or probably a rat, and so the changes may be rung.

I think it very possible that the secret of some of those mystifying outbreaks of intermittent mange in certain stables and kennels will be solved by a better knowledge of the life histories of some of the acarina and an acquaintance with their "bearers" as distinguished from their "hosts."

It is an undoubted fact that many of the non-parasitic acarina are carried to their food supplies by "bearers" of different kinds, beetles, flies, &c., and I should be inclined to expect the same method in the case of the parasitic ones, and I should suggest a very close examination of all living things in the

immediate surroundings of animals that may have been attacked by sarcopts without a satisfactory reason, such as contact with another animal.

In the category of possible "bearers" I should begin with flies, or any other insects that might be in evidence, and, for the purpose of solving the question, as many of these insects as possible should be submitted to expert examination. From my experience with the bearers of other acarina it is probable that not a greater percentage than one in a thousand would be found carrying them, but this one would be sufficient to convey the disease to a horse or other host.

Next I would suggest a very careful examination of cats, rats, and mice in infected premises, and their fleas or lice, which might well be bearers.

A systematic investigation on these lines needs time, money, and co-operation, and also a proper training of a few enthusiasts; it might possibly be done in the Army, where an outbreak of mange is a most serious, and, in times of stress, a most costly matter.

I have given instructions as to the method of capture of parasitic acarina and of dealing with affected hosts. I would supplement this by saying that the method suggested for the examination of the dead bodies of small birds and mammals should be strictly adopted in the case of all small animals taken on infected premises.

A knowledge of the acarina is generally very limited. Pathologists are satisfied with the notion that they are *mostly parasitic*. Gardeners will tell you that the red spider and its ravages is the extent of their knowledge of "mites," and if the subject is broached to one of the general public one is not unaccustomed to get some such assurance as "Oh, yes! I know all about 'mites,' they are bred in cheese," and the idea is that they may wander thence anywhere.

Acarina are almost ubiquitous, they comprise a great order of generally very small creatures, and known as "mites," divided into families, genera and innumerable species, with functions and habits as diverse almost, if not quite, and differing as much in relative size, as those of the great class of mammals, and they play a most important *rôle* in what Professor J. Arthur Thomson, in his recent book "Darwinism

and Human Life," calls the "Web of Life," the function of many of them being to return to the elements such matters as hair, feather, horn, epidermic scales, and many other such matters as are indigestible by animals, reckoned to be higher in the scale of life.

The distinguishing characteristics of the acarina are: the abdomen is not segmented, neither is it pedunctilated, as in spiders, but the thorax and abdomen are fused together in one piece, or generally speaking, the head, thorax, and abdomen are fused together; there is no marked division of these parts of the body as in the insects, such as a fly.

As a rule all the acarina have eight legs when mature; some, indeed, have their posterior legs atrophied and apparently absent, but traces of them can always be discovered, or their absence is an exceptional peculiarity. In their earlier stages they all have six.

The oral apparatus is adapted for biting, or piercing, and sucking. Respiration, as a rule, by trachea.

They are divided into eight main families; some of them are parasitic, some predaceous, others, as their names imply, feeding on various substances, vegetable and animal, as for example:—

Phytophagi.—Vegetable feeders.

Mycophagi.—Fungus eaters.

Glyciphagi.—Feeders on sweets.

Entomophagi.—Feeders on insects (dead ones).

Tyroglyphidæ.—Those that cave out or burrow into cheese, &c.

Rhizoglyphidæ.—Those that burrow into roots or twigs, or suckers of plants.

The following, then, is the generally adopted division of the acarina:—

(1) Trombidiine.—Containing the spinning mites and the harvest mites.

(2) Bdellidæ.—Snouted mites.

(3) Gamasidæ.—A large family of many genera. Many of these are known as the temporary parasites of such insects as beetles, which are really their "bearers" or "carriers."

(4) Ixodidæ.—All the ticks. Some of the large gorged female South African ticks being larger relatively than the myocoptus, as an elephant is larger than a mouse.

(5) Oribatidæ.—Beetle mites. A most interesting family.

(6) Hydrachnidæ.—Water mites.

(7) Halacaridæ.—Marine mites.

(8) Acaridæ.—Containing the (*a*) Hypoderidæ—subcutaneous mites; (*b*) Hypopidæ—Ichneumon mites; (*c*) Tyroglyphidæ—cheese mites and their allies; (*d*) Sarcoptidæ—including all the itch and louse mites; (*e*) Phytoptidæ—gall mites.

It will thus be seen that the Sarcoptidæ are only a sub-family of the Acaridæ, which are one of the families of the acarina.

The Sarcoptidæ, or itch mites, are divided into two sections.

Section I embraces the (1) Sarcoptes; (2) Psoroptes, or Dermatodectes; (3) Symbiotes.

Section II includes the louse mites, as (1) Myobia—found on many small mammals; (2) Listrophorus—principally in the Mustelidæ; (3) Myocoptes—in mice and shrews; (4) Dermaleichus—found on many birds; (5) Dermanyssus—belonging to the Gamasidæ, I think, should also be included in this section, as it is parasitic on many kinds of birds, especially poultry and pigeons.

*(To be continued.)*

---

## CONCERNING ANATOMICAL NOMENCLATURE.

By SEPTIMUS SISSON, S.B., V.S.

*Professor of Comparative Anatomy in the Ohio State University, Columbus, U.S.A.*

It is not the intention in this article to go into the whole question of veterinary anatomical terminology, but rather to attempt to deal briefly with some features of the situation in this regard, in the hope that it may prove helpful in improving our present predicament.

Doubtless no one familiar with the facts will deny that there is great confusion in our anatomical terminology, and some probably would go so far as to characterize the condition as chaotic. A review of some factors in this anatomical babel may assist in working toward a more tolerable status.

The most evident fact is that the number of names is far in excess of requirements, due to the enormous number of synonyms. This imposes on the student a burden which is worse than useless, and is intolerable in the present congested state of the curriculum.

It is not so serious so far as the clinician is concerned, but it is sufficiently annoying to the busy practitioner frequently to encounter in the literature terms with which he is not familiar. Even the experienced worker in anatomy every now and again meets with a name of which the precise significance is doubtful. The writer has kept in close touch for more than twenty years with the literature of this subject, but not infrequently finds—especially in clinical articles—terms with which he is not familiar, although they purport to be anatomical. This multiplicity of terms has arisen in a variety of ways. A majority of the names have been adopted from human anatomy, and some have been applied to structures in animals which were clearly not homologous. Many of the older names were constructed with reference to the horse and are not applicable to other animals. In recent works an effort has been made to correct both of these types of errors. Much duplication has been caused by the translation and adaptation of foreign works by those who were not very familiar with the language of the original or not trained anatomists, or combined both of these defects. Indications are not wanting of what may be conservatively termed gratuitous originality in the manufacture of names. It is high time that it be generally conceded that the determination of anatomical names lies entirely within the province of anatomists. Great damage has resulted from lack of recognition of the fact that if the terminology is to be in any real sense scientific it must be preserved from mutilation by those who do not understand the problems involved and have not the necessary temperament and training to deal with them. The right to an opinion is not congenital but acquired, and there is no royal road to anatomical competence. The present generation of veterinary anatomists cannot properly be held responsible for the confusion in terminology, which is largely an inheritance. The veterinarians of continental Europe are fortunate in the fact that they have been provided, through the efforts of their foremost anatomists, with a uniform set of names which have been chosen with great care. It is sincerely to be hoped that the English-speaking profession will soon co-operate in the substantial adoption of this terminology. As a contribution toward this end, the American Veterinary Medical Association, at its annual meeting in Toronto in 1911, appointed a Committee on Revision of the Veterinary

Anatomical Nomenclature. This committee presented a preliminary report at the meeting at Indianapolis last year, in which were embodied the principles upon which the revision should be based. The more important recommendations were as follows: That each part should have a single name, the official form of which is in Latin. That personal names should be replaced by objective terms, *e.g.*, Ductus parotideus for Stensen's (or Steno's) duct. That related terms shall, as far as feasible, be similar, *e.g.*, Foramen hypoglossi, Nervus hypoglossus; Femur, Arteria femoralis, Vena femoralis, Nervus femoralis. That preference should be given to brief and simple terms, *e.g.*, Dens for Processus odontoideus; Axis for Epistropheus. That names should be applicable to various species as far as possible, relieving us of such terms as Os suffraginis, Extensor suffraginis. With these principles in view the committee is now engaged in the work of revision, and is using the B.N.A. and the names agreed upon by the congresses of veterinary anatomists at Baden and Stuttgart.* With these as a basis the undertaking is greatly simplified, but is still difficult enough—"*periculosæ plenum opus aleæ.*"

Perhaps the writer will be pardoned for referring in this connection to an article by Dr. Stapley, entitled "B.N.A.," which appeared in the VETERINARY JOURNAL (1911, pp. 223, *et seq.*); it escaped my attention at the time in some inexplicable manner, but has lately been read with interest. With much that Dr. Stapley says in that article the writer is in hearty accord. But when Dr. Stapley takes me to task for not adhering to the B.N.A., and states that my text-book was "launched under the flag of the B.N.A.," I am compelled to take issue with him. In the work mentioned no reference whatever is made to the B.N.A. The paragraph in the preface which deals with the matter of terminology is as follows: "Veterinary anatomical nomenclature is at present quite chaotic in English-speaking countries. In this work an attempt is made to eliminate some terms which do not appear to the author to fulfil any useful purpose, and others which are clearly erroneous or otherwise undesirable. In many cases the terms agreed upon by the congresses at Baden and Stuttgart are adopted either in the original Latin or in Anglicized form; otherwise these terms are added in parentheses. The author favours the substantial adoption of this terminology, but considered it

* The Committee (through its chairman, the writer) cordially invites colleagues to favour it with their views on nomenclatural questions.

desirable to offer a sort of transitional stage at present." Thus the book was not launched, neither does it sail, "under the flag of the B.N.A."

Dr. Stapley states that "Sisson has committed an error of anatomical judgment in naming the fused clavicular muscles the mastoido-humeralis; these muscles are all named in the B.N.A., and they should have been given in this book." The name mastoido-humeralis was that found in the only existing text-books of veterinary anatomy of any value in English, and was retained since it was in general use, and did not seem at all highly objectionable. The preferable term, M. brachiocephalicus, naturally does not occur at all in the B.N.A., which was written solely to meet the needs of students of human anatomy; neither do the morphological components of the muscle occur in the B.N.A., but they *do* occur in this much-berated text-book of veterinary anatomy, and in no other in English—contrary to Dr. Stapley's statements in this connection. The difficulties involved in working out names which rest on a broad morphological basis, and are hence widely applicable, are very great, and doubtless in some cases insuperable. These difficulties are nowhere greater than in regard to the muscles, and this is true, no matter what basis is selected for the formation of names—chief attachments, action, form, position, nerve supply, &c. There will be general agreement with Dr. Stapley's position that "Functions and structure are most intimately related, and anything tending to divorce anatomy and physiology is against the true interests of these sciences." But functional allusions lead to anatomical troubles sometimes. Thus the M. extensor carpi ulnaris of man is also an extensor in the dog, but in the horse, ox, &c., it is a flexor of the carpus. As evidence of the difficulties in this regard, it may be stated that an international commission has been working during the last two or three years on the revision of the names of the muscles in mammals; it does not appear that their labours are yet drawing to a close. The writer is unable to share Dr. Stapley's enthusiasm concerning the happiness of Owen's name "protractor scapulæ" for the omo-transversarius, and considers the latter term decidedly preferable, for the reason that anatomical names should be framed on an anatomical basis as far as practicable, and not primarily on a physiological basis.

Dr. Stapley takes the ground that "we are compelled to adopt the B.N.A. as a basis of comparison, and we are compelled to adopt it in its entirety." With this position the writer cannot agree. The B.N.A. was not constructed with any such object in view. It was formed for the use of students of human anatomy, and the chief aim was to secure a single, official, Latin name for each gross structure of the human body, thus ridding the nomenclature of human anatomy of a vast collection of synonyms and checking the addition of useless or objectionable new names. It is probable that no thoughtful anatomical worker will question the great value of the B.N.A. in this respect. The failure of the compilers of the B.N.A. to consider comparative anatomical data in framing the terminology is doubtless regrettable and in some respects difficult to condone, but it must be remembered that the situation was very urgent, and it was therefore desirable to afford relief without unnecessary delay. Furthermore, the profound changes involved in a comparative nomenclature would have been quite revolutionary, and would have met with most serious opposition on the part of medical teachers and practitioners. It is quite unjust and erroneous to suppose that the eminent anatomists who framed the B.N.A. were narrow in their outlook or unappreciative of the value of comparative anatomy. It is highly probable that, if they had attempted to make the terminology in any full sense comparative, the commission would still be at work.

The defectiveness of the B.N.A. in this regard, and its evident worth in other respects, stimulated the teachers of anatomy in the continental veterinary schools to undertake a revision of anatomical terminology as applied to the domesticated animals. To this end conferences were held at Stuttgart and Baden, subsequent to a large amount of preparatory work by the conferees. So far as the writer is aware, the results of these labours have not been separately published, but it is understood that the names chosen are substantially those which appear in the recent editions of the excellent hand-books of Ellenberger-Baum and Martin.* It is this nomenclature which the writer used as a basis for changes in nomenclature which occur in his text-book. It is evident that authors of works of this kind cannot be guided solely

* Ellenberger und Baum, "Handbuch der vergleichenden Anatomie der Haustiere"; Martin, "Lehrbuch der Anatomie der Haustiere."

by their own inclinations, but must take into account the attitude of colleagues and the relations to the literature in associated branches of scientific work. If a book is to contribute to progress it must be used, and it is probably the part of wisdom to assist in a gradual evolution. Certainly remarkable mutations occur in Nature, but they are the rare exception.

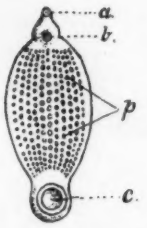
---

## FURTHER NOTE ON A GASTRODISC (?) FROM AN INDIAN ZEBU.*

By S. N. MITTER.

*Lecturer on Pathology, Bengal Veterinary College.*

Since I published a paper on a "Gastrodisc (?) from an Indian Zebu" in the *Journal of Comparative Pathology and Therapeutics*, vol. xxv, Part II., I have received a kind letter from Professor A. Railliet, of Alfort, informing me that the specimen was a




The Parasite in question.

Homolostoger. In this connection I desire to mention that Dr. Benham, in his classic treatise on Platyhelmia, Mesozoa, Nemertim in Dr. Lankester's "Zoology," describes a Homolostoger from the cæcum of *Palonia* (Bos) *frontalis—Homolostoger paloniæ*, Poirier. It is highly probable that my specimen is a local variety of the same species. The above illustration is taken from Dr. Benham's paper, and may be compared with mine in the *Journal of Comparative Pathology and Therapeutics* as above.

* From the Raymond Research Laboratory, Calcutta, India.

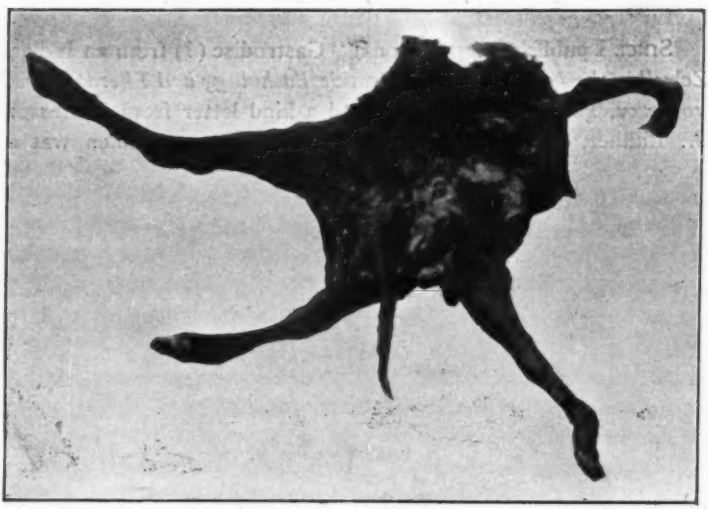
# Clinical Articles.

## ECTOPIA IN A CALF.

By E. LYNE DIXSON, M.R.C.V.S.
*Margate.*

THE accompanying photograph shows a bovine monstrosity which may be of interest to others as it has been to me.

My partner, Mr. L. B. Cole, M.R.C.V.S., was called to a case of dystokia in a cow, and on examination found the head and fore-legs presented. Ropes were put on the inferior maxilla and on both fore-legs, but delivery was a physical impossibility, and the cow died.



A Calf Monstrosity.

A *post-mortem* examination revealed the fact that one hind leg was turned forwards to the head, exposing the whole of the viscera, which formed a loop from side to side over the head. It appeared as though the calf had been turned completely inside out.

I have heard of similar cases, but they must be far from common, as is indicated by the fact that although I have been in practice over thirty years I have never before seen anything approaching it.

## OVARIOTOMY IN A MARE COMPLICATED BY ANEURISM OF THE POSTERIOR AORTA.

By A. R. ROUTLEDGE, F.R.C.V.S.
*Louth.*

The patient, an aged omnibus mare, was an inveterate, ill-tempered brute, and always *in œstrum*. For this reason ovariotomy was decided upon and the mare was cast and chloroformed in the usual way. On making the vaginal incision a sudden rush of blood came over my hand and the mare died of hæmorrhage within five minutes.

*Post-mortem* examination revealed an aneurism of the posterior aorta the size of a child's head, which had been punctured by the knife.

Had I had reason to suspect it and made a careful rectal examination before operating I should have readily felt it and perhaps have avoided the accident. The rarity of the lesion must be my excuse. The ovaries were cystic and cirrhotic.

---

## THROMBOSIS OF THE RIGHT EXTERNAL ILIAC ARTERY.

By J. F. D. TUTT.
*Class D Student, Royal Veterinary College, London.*

*Subject.*—Bay mare.

*History.*—Had been previously hunted in Ireland. On arrival in this country she was found to become quite incapable of moving the hind limbs after a few hundred yards' trotting or galloping.

I saw her on September 24, 1912, and had her galloped. Before she had been once round a moderate-sized square field, the groom that was riding her was obliged to dismount, as she was threatening to fall down. Her breathing was very distressed and she could not move for nearly five minutes.

She was then led back into the stable and her breathing did not become anything like normal till quite thirty minutes later, and she broke out into a very profuse sweat. On making a rectal examination, I found that no pulse was perceptible on feeling the right external iliac artery, which was hard to the touch as if it had been injected after the manner adopted in

subjects for dissection. It was very much larger than its fellow of the opposite side, which was quite normal and from which a pulse could be obtained. It was immediately diagnosed as a case of thrombosis, and slaughter was advised.

*Post-mortem Examination.*—The heart, except for the right side, which was hypertrophied, was sound. Complete thrombosis of the right external iliac artery, thrombosis in aorta, and the internal iliac arteries were partially blocked. I showed the specimen to Sir John McFadyean, who stated that it would be difficult to state its exact etiology, but that it was probably parasitic.

---

## THREE INTERESTING CRYPTORCHID CASES.

By FREDERICK HOBDAY, F.R.C.V.S.

*Kensington, W.*

The curiosities and anomalies met with by the "Rig" operator are many, and three which have been recently met with have been sketched and are reproduced here. For the pathological examination and descriptions I am indebted to Sir John Bland Sutton, F.R.C.S.

*Case* 1 was removed from a Shire colt, 3 years old. The left testicle was in the scrotum and weighed 10½ oz., the right one being in the abdomen and weighing 1 lb. 9 oz.

It was much enlarged and contained cystic fluid with several pieces of cartilage and bone.

The pathological description is as follows:—

### Cystic Embryoma of the Testicle (Fig. 1).

This is a specimen of unusual interest; it is as large as a cocoanut. On dividing it in a sagittal direction the bulk of the tumour consists of a large cavity filled with fluid, and on its floor there is a lobulated solid tumour the size of a duck's egg enclosed in a thin osseous capsule. The epididymis is easily seen; a small body lying on the wall of the cyst represents the body of the testis, and on microscopic examination seminiferous tubules are easily seen.

The tumour is an embryoma contained in a cyst and replacing the paradidymis. The solid bone-encapsuled body contained within the cyst is made up of embryonic tissue containing secreting glands, tracts of bone, and cartilage.

A cystic testicular embryoma of this nature is a rarity.

*Case 2* was removed from a Shire colt, 13 months old. The left testicle was in the inguinal canal and the right one in the abdomen. It weighed 2½ lb. after the fluid was removed. This latter process was done by scratching the cystic portion through with the finger nail whilst in the abdomen; as it was too large to be removed, unless an enormous wound had been made, before this was done.

FIG. 1.—Cystic Embryoma of the Testicle. A, Tumour tissue with body of the testicle on the left; B, Cyst cavity.

The pathological description is as follows:—

CYSTIC TESTICLE.

In the drawing, the testicle is represented in sagittal section. The body of the testis is as big as a turkey's egg, and contains three cysts filled with yellow fluid. The cysts are separated from each other by narrow strands of tissue containing seminiferous tubules. The cysts are lined with dense fibrous tissue devoid of epithelium.

Cystic disease of the body of the testis, as seen in this specimen, is not uncommon in rams.

It has nothing in common with the condition known as general cystic disease of the testis in man, for in the latter the disease arises in the paradidymis, between the body of the testis and epididymis, and though the secreting tissue of the testicle is compressed by the tumour the cysts never invade it.

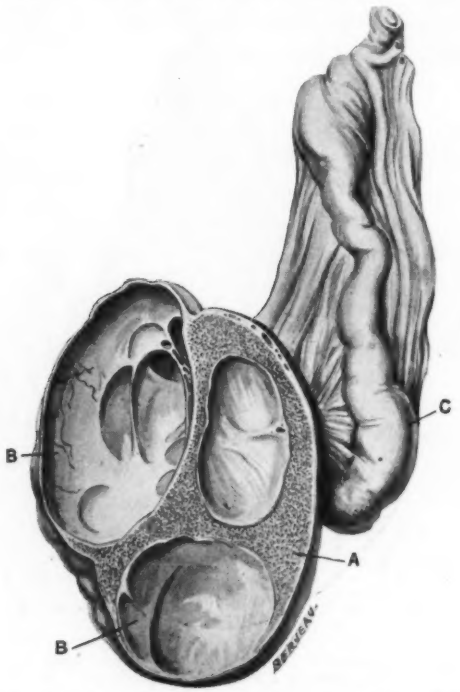



FIG. 2.—Cystic Testicle. A, Testicular tissue; B, B, Cysts; C, Epididymis.

*Case* 3 was a bay Shire colt, 2 years old. The right testicle was in the abdomen, and weighed 1½ lb.

The pathological description is as follows:—

EMBRYOMA OF THE TESTICLE.

This testicle is about the size of a duck's egg, and the relation of the various parts is represented from a sagittal section of the organ. The testis and epididymis are widely separated from

each other by a mass of tissue having the naked-eye features of fat. This block of tissue compresses the proper tissue of the testis which lies flattened around the periphery of the fat-like mass which replaces the paradidymis. Microscopically the tumour contains the mixed elements of an embryoma. The tissue itself is embryonic in character, and collections of glandular

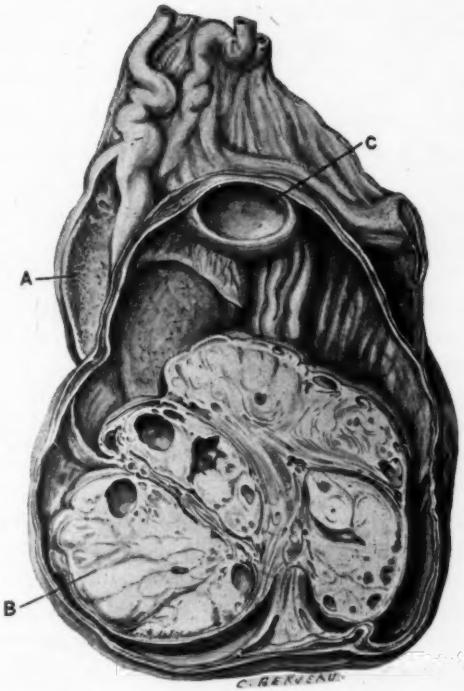



FIG. 3.—Embryoma of the Testicle. A, True testicular tissue; B, Tumour tissue; C, Cyst.

tissue resembling the secreting glands of the skin are fairly abundant. Neither hairs nor teeth were detected in the sections.

Each of the horses made a good recovery, and there were no complications to cause anxiety. The operations were done under chloroform, and in each instance the only method of preparation was to paint the skin with tincture of iodine, no soap and water being used at all.

Case 2 is interesting as illustrating that the fluid contents were aseptic, as a considerable quantity escaped directly into the abdominal cavity; this, however, has been observed before both by myself and by other writers.

---

## THE OPERATIVE TREATMENT OF CAPPED KNEE IN CATTLE.

By Dr. A. SALVISBERG.
*Tavannes.*

The synovial swelling of the knee in cattle is nothing more than a diseased condition of the bursa on the anterior surface of the carpus.

Siedamsgrotsky considers a capped knee of little significance except as an eyesore.

As regards treatment, almost all authors coincide in the view that cure cannot always be effected. B. Strebel says: "In a few cases treatment is successful, in other analogous cases it is unsatisfactory and even useless."

March has operated on 187 animals by cutting out a half-moon-shaped piece of skin, removing the blood-clot and the internal capsule, suturing the wound and putting on a tar bandage—healing by immediate union.

The view of Siedamsgrotsky undervalues the significance of capped knee. Hygromas as big as a child's head may form and hinder flexure of the joint, so that the animal must always lie with an extended limb. Movement at grazing, too, may be very limited. I have operated on many animals because they could no longer graze and must be stall fed. Just the circumstance that such cows are bad grazers reduces their value; and pedigree animals so affected are greatly reduced in value.

The treatment of knee tumours was a thankless task for me for many years. I had many bad results and few successes. After the appearance of Kallmann's work I thought I could treat this bursitis as effectually as he had done. I, however, obtained no better results than with the earlier treatment. If large quantities of tincture of iodine were injected into the evacuated bursa a painful swelling arose; the animal fell away in appetite, rumination and milk secretion for a few days and pronounced

iodism ensued. March's treatment satisfied me, but on various grounds it cannot be employed by every practitioner. If a bursitis is to be cured the internal capsule must be removed or destroyed so that no fresh secretion arises.

In order to check this serous exudate and to destroy the capsule, I proceed as follows:—

*Technique.*—With a small barber's clippers I go over the lower half of the swelling. The whole swelling is washed with soap and soda water. The lower clipped half is cleansed with tampons soaked in spirit of ether. In bursitis of the right knee the animal is tied short and pressed up with the left side against a wall. Vicious animals must be controlled with the holders. The limb to be operated on is extended by two assistants and put in a wood block about 30 cm. high. With the pointed bistoury the swelling is incised at the lowest end, and afterwards the incision is enlarged with the blunt-pointed bistoury upwards and downwards for 6 to 7 cm.

It must always be carried as low down as possible so that no pocket arises. With a specially constructed curette the internal lining of the whole bursa is curetted. It is important to act systematically in this procedure and to see that the anterior and posterior wall, as well as the angles, are curetted. The animal bears this well, and takes less notice of it than in incising and cutting the wall of the swelling.

In most bursæ one finds fibrin clots similar to scrambled eggs; these must, naturally, be removed before curetting, and this may easily be done with the curette.

The whole cavity is now packed with a gauze bandage. At first I used iodoform gauze. I have, however, learnt that it is well to kill by irritants little remnants of the internal capsule that remain behind after curetting. For this reason I use a gauze bandage 8 cm. broad, which is soaked in 50 per cent. carbolic spirit. I keep such bandages always prepared in a glass bottle; they become dry after a time and they can be rolled up without irritating the hands. Tamponing must be carried out systematically. With an S-shaped probe the gauze must be well pushed in and the sides and lower portion of the cavity filled. According to the size of the hole one uses six to eight metres of this drying bandage. The packing is left for three days and removed by the owner.

The after-treatment consists in once daily washing the operation wound with a disinfectant. On the day after the operation and for some time the tumour is hard but visibly smaller. Suppuration is always very slight.

I may state here that I have had equally good results in the treatment of capped elbow in the horse with this treatment. Where the wall of the tumour is thick "feu français" may be used with advantage, and is rubbed in at intervals of three weeks. "Feu français" is made up as follows: Canthar. pulv. 25 parts, digested for fourteen days with 300 parts of olive oil and 200 parts of oil of turpentine. Shake well daily. After standing until clear pour off the fluid. This has a number of virtues which other vesicants do not possess. The hair is clipped off the part, which is washed with soap and soda water before applying the vesicant. Useful in cases of penumonia and all conditions where cantharides ointment is usually applied.—*Schweizer Archiv für Tierheilkunde.*

---

## A CASE OF COMPLETE LEFT-SIDED FACIAL PARALYSIS.

By Staff Veterinary-Surgeon KLINGBERG.

A few months back I was called to a horse that had been eating indifferently and had a badly swollen eye. He had been kicked on the side of the head by another horse a few days previously. My examination revealed the following condition on the left side of the head: 3 cm. below the root of the ear I found a hairless place, 5 cm. long and 2.5 cm. broad, covered with a scab. This part was swollen and painful on pressure. The left auricle was lower than the right and inclined backwards. The upper left eyelid was drawn over the globe of the eye more than the right. The conjunctiva was inflamed; the cornea was a milky colour and raw on its surface. In the lower-third of the anterior chamber of the eye there was a blood-clot as large as a bean. Between the conjunctiva and the globe of the eye little foreign bodies, hay seeds, sand, and dust could be seen. The nasal orifice was reduced in size, the upper as well as the lower lip was drawn down to the right side. These changes could be best seen from in front. The taking of food was difficult. The horse grasped the food with his teeth; the food remained lodged between the cheek and the back teeth. In drinking, the mouth

was put into the water beyond the angles of the lips. The left parotid gland up to the root of the ear was rubbed and massaged with iodine vasogen (6 per cent.). The conjunctiva was irrigated with 2 per cent. boric solution in order to remove the foreign bodies between the globe of the eye and conjunctiva. Besides 2 per cent. boric, compresses were used, and a leather shade to the eye. As food the horse received oats, hay, and bran mashes. Since there was no improvement after fourteen days the parotid region was rubbed with cantharides ointment. After five weeks there was a noticeable improvement. After eight weeks there was complete recovery.

Judging from the nerve-supply implicated it would seem that a hæmatoma arose under the parotid as a result of the kick. This hæmatoma exercised pressure on the facial nerve and caused the symptoms of illness described.—*Zeitschrift für Veterinärkunde.*

## EPITHELIOMA ON THE TONGUE OF A HORSE.

By Chief Veterinary-Surgeon Dr. KETTNER.

Frequent protrusion of the tongue on the right side of the mouth was noticed when riding a cavalry horse. On examining the mouth on the left side of the tongue near the attachment of the frænum there was found a flat tumour about as large as a pigeon's egg united by a pedicle to the under surface of the tongue. The outer surface of the tumour showed an irregularly shaped piece of a greyish red colour in its centre about the size of a 2-mark piece; at its edges and on the surface reflected over the tongue it was yellowish white to pure white. On the whole upper surface of the growth there were punctiform hæmorrhages. The cut surface was greyish red and greyish white. The weight of the tumour was 5 drachms. Treatment consisted in snaring the tumour and cutting it off with scissors behind the snare. Cure occurred in ten days. The tongue no longer protruded from the mouth. Microscopic and histological examination showed the neoplasm to be a "papillary epithelioma." The case is of clinical significance as showing that protrusion of the tongue may be due to a tumour.—*Deutsche tierärzt. Woch.*

## A NEW TREATMENT OF ROARING.

By H. A. VERMEULEN.

Arising from the experimentally proved fact that thyroidea exercises a considerable influence over the degeneration and regeneration of peripheric nerves, and that roaring is caused by degeneration of the left recurrent nerve, thyroidea powder was used to combat the disease. After long continued treatment there was marked improvement. In every case it is possible to check the symptoms of the disease over the fourteen days' warranty time which is customary in the horse trade (in Germany).—*Oesterreichische Woch. für Tierheilkunde.*

---

## PRURITUS CUTANEUS, ITCHING OF THE SKIN OF THE HORSE, AND ITS TREATMENT.

By Chief Veterinary-Surgeon GAUSSELMANN.

An article written by Staff Veterinary-Surgeon Kroning (see Veterinary Journal, October, 1912, p. 613) on "Pruritus Cutaneus" appeared recently in *Zeitschrift für Veterinärkunde.* In that article Kroning refers to my investigations and experiences of the disease.

During the last four years seven patients suffering from the disease have been brought to me for treatment.

Six horses have been cured and the seventh is still under treatment.

In my opinion there is no ground for believing that the complaint is due to bad stables and lack of attention. All seven horses were well tended and housed. The apparently congenital thin covering of hair made possible and favoured a good cure of the skin. Further, according to literature, the nourishing of horses with unaccustomed food-stuffs (maize, vetches, clover) and bad fodder has a causative connection with pruritus. My patients were well nourished throughout and under the same conditions and fed with the same food as a great number of other horses.

In men and dogs nervous disturbances or general malaise have been held responsible for the condition. In no case have I attributed the complaint to another disease, but in two of the horses I have seen papulous-vesicular eczema at the same time.

It appears, therefore, that skin itching may be concurrent with other skin affections or form the basis of them. The symptoms given in literature coincide entirely with my observations. The most frequently involved regions are the neck, saddle region, and the sides of the chest and belly; more rarely one finds local pruritus. The situation of the complaint then is the root of the tail or the base of the mane.

The affected places are covered with a thin, short, lustreless covering of hair. A loss of hair before the occurrence of itching has not been noticed, but during the continuance of the malady gnawing, rubbing and biting caused it to fall out. Generally the skin is not thickened, but dry, leathery, and covered with small scales, at places blood-tinged spots, scabs and incrustations form as a result of gnawing, chafing and biting. The itching arising is at times, especially in winter, small, and at another time the horse shows intense restlessness. In two horses in the summer I noticed this itching combined with papular vesicular eczema under the saddle after severe sweating, but I never saw the complaint spread by grooming utensils or numnahs.

Microscopic and macroscopic examination of scales, scabs, and incrustations gave a negative result.

Four horses had been previously treated, but in three I had the complaint under my care from the first. I at first used many things in spirituous solution and ointment form without success, although I also kept the horses from biting themselves.

I then used a naftalan ointment made up as follows: naftalan, 20 parts; unguentum paraffin, 200 parts; ol. terebinth., 5 parts; and the itching ceased completely.

In all seven horses the skin itching has not returned up to now, but the papular vesicular eczema recurred along with itching in one horse, but was cured in a few days.

In using the ointment the following points are important:—

(1) The skin must be thoroughly cleansed.

(2) In case of mane and tail disease both must be cut short.

(3) All ailing parts and their neighbourhood must be rubbed for half an hour with the ointment.

(4) The rubbing must be repeated twice in the space of three days.

(5) Two days after the last application the ointment is washed off.

According to my experience one can dress the animal all over without injury.

With naftalan I have also had good results in scurfy skin, wounds, eczema, burns and excoriations, and insect stings.—*Zeitschrift für Veterinärkunde.*

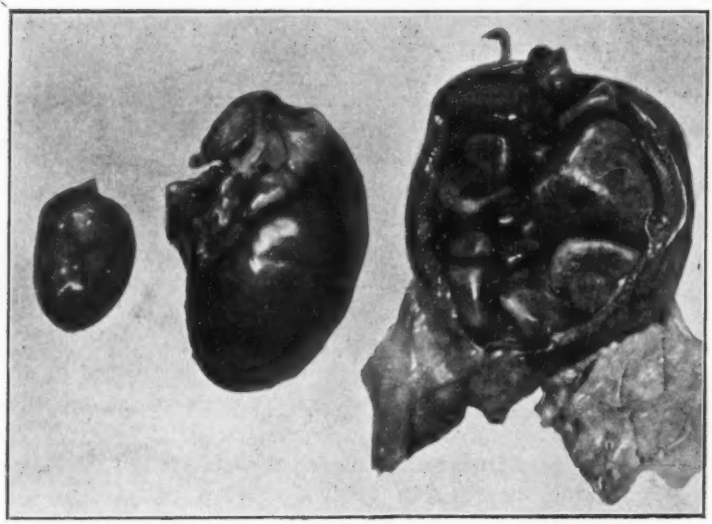
## Canine Clinicals.

### VESICAL AND RENAL CALCULI.

By ARTHUR PAYNE, F.R.C.V.S.
*Weybridge.*

AN INTERESTING POST-MORTEM FIND.

ON January 25 a Pekingese bitch, about 8 years old, was brought to our infirmary, as the owner was leaving home for a few weeks. It was explained to our kennel-man that the bitch



Bladder (filled with calculi) and Kidneys from a Pekingese Bitch.

was in the habit of passing her urine about the house, and the owner fancied that while she was away the dog might be ill-treated by the servants on that account.

Two days later our man informed us that the bitch had died during the night.

*Post-mortem* showed that the body was fairly well nourished.

The bladder was crammed with calculi from the size of a small walnut downward. I counted thirty-five sizable ones.

The accompanying photograph will also show the relative sizes of the kidneys. The large one contained a cone-shaped calculus, and was appreciably above its normal size.

The small organ was the size of a horse-bean.

---

## A NEW TREATMENT FOR CERTAIN FORMS OF CANINE STIFLE-JOINT LAMENESS.

By ARTHUR PAYNE, F.R.C.V.S.

*Weybridge.*

The operation of rowelling, like "blood-letting," has fallen into disuse in recent years. It was performed by our forefathers for the cure or alleviation of various disorders, such as laminitis and pleurisy. During the last few years we have performed a modification of the operation in cases of so-called stifle-joint lameness in dogs with extremely gratifying results.

I suppose that every veterinary surgeon with a canine practice is familiar with, and has been consulted at some time or other by, an owner whose dog has a persistent lameness in the hind limb, the severity of the symptoms, from a slight limp to a dead lameness, depending on the phase of the disease at the time the surgeon is asked to prescribe.

In discussing the case with your client you will observe the dog to stand with the foot of the affected leg slightly behind its fellow; the leg having the appearance of being shorter than the sound one, the toes only resting on the ground, and being turned slightly outwards.

Upon a closer examination the joint may perhaps be found enlarged and firm to the touch.

It is not my purpose here to describe the etiology or pathology of the disease, but to give a general outline of the operation, so that others might give it a trial.

As our patients vary considerably in size, the description given is on the surmise that the patient is a fox-terrier.

A spot is chosen midway between the hip and stifle, and the hair clipped short or shaved, the skin anæsthetized and painted with tinct. iodine.

In long-haired dogs the coat is clipped off the whole of the limb. A vertical incision, about ½ to ¾ in., is made through the skin, and a pocket formed by dividing the subcutaneous tissue for about an inch (directed towards the stifle) with a blunt instrument, such as the metal handle of a scalpel.

This pocket is made sufficiently large to accommodate a tightly-rolled pledge of tow (about the size and shape of a small monkey-nut), which has previously been saturated with 1 in 6 cantharides oil and olive oil.

A suture is not always necessary, but I generally make use of one.

This pad is kept in position until a decided reaction has occurred and persisted for a few days; on an average from five to seven days is sufficient. The surgeon will use his judgment as to the fit and proper time to remove it.

I wait until there is marked infiltration downwards to the hock, and a copious discharge from the wound, which must have means of exit.

If a few days after removal of pad the reaction is still very decided and persistent, we wash out the cavity with a saline solution or a solution of boric acid.

The following are a few of the cases operated upon:—

*Case* 1.—*Black and white field-spaniel*, 9 years old. Lameness, which was very pronounced in the left hind-leg, had been gradually increasing for three or four months, when he was brought to our surgery by the owner, who had recently come to reside in our neighbourhood.

There was no marked enlargement in the stifle, but pain was evinced on pressure and flexure of the joint, and the muscles on the affected side showed marked diminution in size.

The operation was decided upon and duly performed as described. A few days later there was an improvement in the animal's gait, and in six weeks the lameness had practically disappeared. About a year later he was brought to the surgery again, as there was a recurrence of the old trouble.

For a few weeks he was treated with liniments, and internal administrations of salicylates, pot. iodide, &c., with no result.

The operation was performed a second time, and about a month later the dog was sound.

There was no further recurrence of the lameness, and he was

destroyed last week, 13 years old, on account of an enlarged spleen.

*Case 2.—Fox-terrier*, 5 years old. Had been slightly lame in right hind-leg for six weeks. No pain on pressure, but slight symptoms in flexure of joint.

Treated medically for four weeks, accompanied by increasing lameness.

Came to hospital for operation, and in four weeks lameness entirely disappeared.

*Case 3.—Fawn bulldog*, 3 years old. Had been lame in right hind-leg for about four months, during that time had been treated by two veterinary surgeons.

In standing the leg was carried as described in my opening remarks, and was affected occasionally with a spasmodic upward movement, accompanied by a pawing action of the foot.

The operation was not followed by a complete cessation of symptoms, at the same time the lameness was scarcely observable, and in running he would go on three legs for a few steps at times.

*Case 4.—Black Cocker spaniel*, with chronic and increasing lameness. Same treatment followed by soundness in affected limb.

Other cases operated upon include Aberdeen terriers, cross-bred retrievers, &c.

Before bringing these notes to a close I might add that no ill effect has ever followed the operation.

---

## PROSTATITIS WITH AN UNUSUAL CYST IN A DOG, COMPLICATED WITH NEPHRITIS.

By GEO. H. WOOLDRIDGE, F.R.C.V.S., M.R.I.A.
*Professor in the Royal Veterinary College, London.*

A BIG male dog, a retriever-collie cross-bred, was brought to me at the College with the information that he had been rather dull for about a week, that he was constipated and his appetite very capricious. His previous history was a fairly good one, his only trouble having been a mild attack of gastritis several months before.

On examination he was found to be in rather thin condition, with hollow flanks and pendulous abdomen, and he walked with a very unsteady gait, his hind-quarters reeling, almost like a drunken man. His visible mucous membranes were rather

pallid, pulse weak and frequent, temperature *per rectum* 100.5° F. On manipulating the abdomen, a very tense body could be felt immediately in front of the pubis and extending towards the epigastrium. It appeared ovoid in shape, and pressure caused a little discomfort and the passage of a few drops of turbid urine. This made me suspect a distended urinary bladder. Further manipulation failed to reveal any indication of constipation, the bowels being practically empty (a condition so frequently confused with constipation by the layman). Digital examination *per rectum* revealed this bowel to be empty, and no sign of a prostate body could be felt within the pelvis. The enlarged gland had evidently fallen forwards below the brim of the pelvis and the diagnosis arrived at was enlarged prostate with retention of urine. Passage of the catheter, however, failed to draw off any urine.

The animal was in a very weak condition and obviously could not last long in that state. Laparotomy was therefore recommended to see if the condition could be relieved. The owner, however, deferred consent for twenty-four hours, during which time, in spite of stimulants, the dog got decidedly weaker.

For operation the dog was put under the effects of morphia, and after preparing the site and disinfecting with tincture of iodine, an incision was made through the abdominal wall on the right side of the prepuce. A little ascitic fluid escaped. On examining internally a large body was observed which necessitated enlarging the incision to six or seven inches in order to bring the body out for closer inspection. The urinary bladder was then found to be almost empty, but the prostate was enlarged to about the size of one's fist. Immediately in front of it, and lying directly above the bladder between it and the rectum, was a thick-walled cyst, about the size and shape of a large donkey's testicle, and covered with peritoneum. A vain attempt was made to draw off the contents by means of a small trocar and cannula; a larger instrument was next tried and then an aspirator, both in vain. On withdrawing the cannula it was followed by a droplet of very viscid tenacious fluid, but no flow. The cyst wall was then incised and a large quantity, estimated at about half a pint, of thick, greenish, flocculent material welled out. The cavity of the cyst was then washed out with an iodine preparation and then closed with sutures. The prostate was

found to be so densely adherent to the urethra and the neck of the bladder as to be inoperable so far as any hope of success could be entertained with a patient in such a weak condition. The abdominal wound was therefore closed with two rows of interrupted silk sutures; stimulants were administered and an unfavourable prognosis given. The patient died about twelve hours later.

On *post-mortem* examination, both kidneys were found to be affected with interstitial nephritis, the pelvis of the kidney in each case was dilated and the cortex contained numerous small urinary cysts. The bladder contained a little urine and its mucous membrane was only slightly congested. The prostate was as large as a big orange, and very dense. The nature and origin of the cyst, however, remain a mystery. No communication could be discovered with the prostate or the urethra. The vas deferens of each side was firmly adherent to it and gave the impression of leading into it. No openings of the ducts could be discovered in the urethra. The lumen of the vas in each case was extremely small and could only just be made out by the naked eye on cross section. One is very diffident in suggesting that the condition represents a rather extraordinary anatomical anomaly, but it would appear as though the two deferent ducts had led into a common blind sac and that the secretions had slowly accumulated. The testes were about normal in size, but were very soft and flabby.

It is probable that the nephritis was the principal cause of the great weakness of the patient.

---

## UNIVERSITY OF LONDON.

### Preliminary Examination in Veterinary Science for Internal and External Students.

### Pass List.

301. Housden, Leslie George, Royal Veterinary College.

EXAMINERS.

*Inorganic Chemistry:* J. A. Gardner, Esq., M.A., Professor H. Jackson, F.C.S., H. R. Le Sueur, Esq., D.Sc., and J. E. Marsh, Esq., M.A., F.R.S.

*Physics:* J. H. Brinkworth, Esq., B.Sc., G. W. C. Kaye, Esq., D.Sc., B.A., A. W. Porter, Esq., B.Sc., F.R.S., and Professor F. Womack, M.B., B.Sc.

## Abstract.

### THE AGGLUTINATION AND COMPLEMENT FIXATION REACTIONS IN ANIMALS EXPERIMENTALLY INOCULATED WITH JÖHNE'S BACILLUS, WITH SPECIAL REFERENCE TO THE RELATION OF THIS BACILLUS TO THE OTHER ACID-FAST BACILLI.

(*From the Laboratories of the Brown Institution, University of London.*)

By C. C. TWORT, M.B., Ch.B.,

"*Beit Memorial Fellow.*"

THE disease of cattle known as pseudo-tuberculous enteritis, the clinical manifestations of which are a chronic diarrhœa and gradual wasting of the infected animal, was first described by Jöhne and Frothingham in 1895. Numerous cases have since been reported from most of the countries of Europe and from America, it being recognized at the present time that the number of animals dying annually from this disease is considerable.

In 1910 F. W. Twort and G. L. Y. Ingram succeeded in growing the specific micro-organism, an acid-fast bacillus, outside the animal body, on a medium used by the former for the cultivation of the lepra bacillus of man. In a later paper by the same authors will be found an extensive study of the cultivation of the bacillus and the preparation of diagnostic and therapeutic vaccines.

The medium they used is made up as follows: 75 c.c. egg; 21 c.c. NaCl, 0.8 per cent.; 4 c.c. pure glycerine; 1 grm. dried *Bacillus phlei* previously killed by steaming.

Various other acid-fast bacilli or alcoholic extracts of the same may be used in place of *B. phlei*, full details of which are given in the authors' original papers. This work has since been confirmed by H. Holth in the laboratories of Prof. Jensen at Copenhagen.

The inoculated tubes are capped with gutta-percha tissue and incubated at 39° C. It is best to incubate for about two months when a fairly rich growth is obtained resembling in quantity that of a two months' bovine tubercle culture, recently isolated from the body.

To prepare a bacillary emulsion for animal inoculations one adds to each tube, 1.5 cm. in diameter, 2 c.c. of a 0.85 per cent. NaCl. solution, the growth being rubbed off with a sterile pipette or spatula. Great care must be taken to scrape away as little as possible of the underlying medium so as to avoid the production of antibodies to the egg or the nutritive bacilli used in making the medium, by the inoculated animals. An emulsion of the bacilli is then made by shaking for three to six hours in an ordinary electrical shaker. The shaking is carried out in a strong glass bottle fitted with a rubber stopper and containing glass beads of various sizes. This bottle should be half filled with beads and the liquid to be emulsified added until slightly above the half-way mark, *i.e.*, just above the level of the beads; a large quantity of beads with a small amount of liquid give a good emulsion in a comparatively short time. Paraffin wax is then run

round the stopper and the latter securely tied. If the quantity to be emulsified is small, thick test tubes are partially filled with beads and after the addition of the bacilli sealed in the flame and shaken as before. The emulsion thus prepared is immediately inoculated into animals, or at the most kept in the ice chest for a few days.

Owing to the inability to procure naturally infected animals these researches have been almost entirely confined to those experimentally inoculated, the animals used being cows, calves, sheep, goats, rabbits and fowls. Although the two last mentioned do not take the disease they readily produce specific antibodies and invariably succumb when more than one large dose is inoculated (Twort and Craig unpublished). Goats are usually considered to be refractory.

A cow, some calves, sheep and goats each received one inoculation either intravenously, intraperitoneally or subcutaneously. Rabbits and fowls were mostly given two intravenous inoculations, the living bacilli being used in all cases. The second inoculation was made four to five days after inoculation of the primary dose, thus avoiding any anaphylactic phenomena from traces of egg, these appearing from white of egg from the 12th to the 20th day according to the dose (Besredka and Bronfenbrenner). The serums of the animals are then tested at varying intervals, the antibodies not being much in evidence before the second week.

### Complement Fixation.

The Wassermann technique has been followed throughout, the complement being titrated each day.

As antigen one prepared an emulsion of the bacilli in the same way as that described above for the animal inoculations with the addition of an hour's heating in the water bath at 60° C. before and after shaking. We have found no advantage in using the living bacilli as antigen.

Serums of thirty-one animals inoculated with Jöhne's bacillus have been tested. A naturally infected Jersey bull with the disease fairly advanced gave a good positive reaction on three different occasions, but as the disease progresses the reactions are becoming less well marked. The serum of a naturally infected cow, in an earlier stage of the disease than the above-mentioned bull, gave a negative result; both these animals had previously received tuberculin. From a cow, given the disease by feeding with a culture of the bacillus, a good positive reaction was obtained, but on *post-mortem* examination tubercular lesions were found in conjunction with pseudo-tuberculous enteritis. Six calves inoculated with 2 c.c. of an emulsion of Jöhne's bacilli, 2 intravenously, 2 intraperitoneally and 2 subcutaneously, gave negative results before and two weeks and three months after the inoculation with the exception of one inoculated subcutaneously, which reacted slightly at the end of three months. Two goats and two sheep only showed a slight reaction six months after intravenous injection. In a number of fowls which received several doses negative results were recorded throughout, whilst rabbits after the second intravenous injection nearly all gave a good positive reaction. Most of the rabbits and fowls used in these experiments have ultimately died, the

quantity of serum injected for each dose being large. We are now endeavouring to obtain serums richer in antibodies by using smaller doses of the living and dead bacilli, and by utilizing other sites of inoculation. The use of partial antigens as described by Much for tubercle is not at present feasible, as we have not a sufficient amount of bacilli at our disposal for extraction.

### Agglutination.

For the agglutination tests an emulsion is prepared in the same way as that used for the antigen in the complement fixation reactions; a young culture is preferable and it is advisable to shake for a longer time. After shaking, the emulsion is allowed to remain for from twelve to twenty-four hours in the ice chest for sedimentation to take place, or it may be gently centrifugalized and the supernatent fluid pipetted off. By this means we have obtained a fairly homogeneous emulsion; indeed, the growing of a homogeneous culture as described by Arloing for tubercle agglutination tests is hardly practicable owing to the slowness of the growth in fluid media and the difficulty of obtaining a culture on potato tubes containing the *B. phlei* extracts. It would also involve the additional necessity of employing extracts of the timothy-grass bacillus instead of the intact micro-organism. Jöhne's bacillus is more easily emulsified than the human tubercle bacillus or Moeller's timothy-grass bacillus; on the contrary it is more difficult to emulsify than the bacillus of avian tuberculosis.

The serums used were the same as for the complement fixation test, the reactions being done with the fresh and heated serums. Half an hour in the water-bath at 56° C. partially or totally destroys the agglutinins for Jöhne's bacillus produced by all the different animals experimented upon with the exception of the fowl. The Jöhne agglutinins produced by the fowl, as those of avian tuberculosis and *B. phlei*, do not appear to be influenced at this temperature. As a preliminary test one drop of the fresh serum is added to four drops of the emulsion and incubated at 37° C. for three to four hours, although a positive serum usually agglutinates long before this time. In any case the controls must be well watched as spontaneous agglutination easily takes place, especially with the living bacilli. For this reason we have no advantage in using living bacilli; on the other hand a positive serum seems to agglutinate the dried bacilli quite as well as the ordinary emulsions of living or dead bacilli, and here the spontaneous reaction is least marked. If the serum give a complete reaction it is then titrated, the same being done with the heated serum. The naturally infected bull gave a good positive reaction on three different occasions up to a dilution of 1 in 15. The naturally infected and experimentally fed cows gave moderate reactions. The six calves all gave a fair reaction three months after being inoculated. The two goats and sheep were negative, but the fowls' serums usually agglutinated well after the second inoculation. Rabbits' serums, on the other hand, reacted less, which is the contrary to that found in the complement fixation tests. The most strongly positive reactions were given by some of the fowls' serums, com-

plete agglutination being obtained with a dilution of 1 in 25. One normal fowl gave a well-marked reaction. The serums of most of the animals used in these experiments, however, were negative before the bacilli were inoculated, a notable exception being a fowl which received one intravenous injection twelve months before the blood was tried and gave a positive reaction with a dilution of 1 in 25.

### Specificity of the Reactions.

The serums of eighty-eight animals obtained from various sources were tested *re* complement fixation and agglutination with *B. phlei*, human, bovine and avian tubercle bacilli, and Jöhne's bacillus. Jöhne's bacillus was grown on the egg medium containing dried timothy grass bacilli, and the remaining bacilli on Dorset's egg medium. A glycerine agar medium containing *B. phlei* extracts would have been preferable, but unfortunately this does not appear to be suitable for Jöhne's bacillus. All the antigens were titrated on the same day under exactly similar conditions. In a few cases the quantity of serum withdrawn did not enable one to perform the whole series of tests.

As was to be expected the degree of specificity within the acid-fast group was very limited. Usually a serum positive to its homologous bacillus also gave positive results with all the other members of the group, although often in a less marked degree. The question of the relation of avian tuberculosis to Jöhne's disease, and the use of avian tuberculin as a diagnostic vaccine (Bang, Male) led one to think that possibly the avian type of tubercle bacillus would show a closer relation to Jöhne's bacillus than the other tubercle bacilli in test-tube experiments. Our experiments do not appear to lend support to this hypothesis. Fowls and rabbits inoculated with avian tubercle bacilli gave serums that agglutinated an avian emulsion in some cases with a dilution of 1 in 100, while Jöhne's bacilli, although certainly agglutinated, gave very little better reactions than human or bovine tubercle bacilli, or even *B. phlei*. In the same way serums obtained from Jöhne animals agglutinated all five varieties and when titrated showed no marked preference except for its specific bacillus, and in many cases even this preference was not noted. Rabbits and fowls inoculated with *B. phlei*, and rabbits inoculated with human tubercle bacilli, reacted in the same way, most of the human tubercle rabbits, however, gave negative results throughout.

The serum from an advanced case of human leprosy showed no trace of an agglutinin, but the complement was partially fixed with all the antigens used, that with Jöhne's bacilli being least marked. It was found impossible to demonstrate the presence of a specific and of a partial agglutinin by means of Castellani's method. For example the agglutinins in the naturally infected bull's serum and in that of an experimentally inoculated rabbit were entirely absorbed by emulsions either of human tubercle bacilli or of Jöhne's bacilli and subsequent addition of Jöhne's bacilli and human tubercle bacilli respectively, after centrifugalization, &c., gave no agglutination in either case.

The specificity of the complement fixation test was very similar to

that of the agglutination, no appreciable difference being shown with the various antigens. The only normal serum giving a positive agglutination was that of the above-mentioned fowl and possibly the fowl inoculated with one intravenous dose of Jöhne's bacilli a year ago. In this case there was a well-marked reaction with a Jöhne emulsion in a dilution of 1 in 25 whilst with the tubercles it was barely complete at 1 in 5. However, on killing the animal, a microscopical examination of the organ showed them to be normal in structure.

No normal serums gave a positive complement fixation.—*Centralbl. für Bakt. Parasit. u. Infektionskrankheiten.*

---

## Reviews.

**The Register of Veterinary Surgeons, 1913.** Published at the Offices of the Royal College of Veterinary Surgeons, 10, Red Lion Square, Holborn, W.C. Price 3s. 6d. post free.

We have received a copy of the new Register of Veterinary Surgeons for 1913, and are pleased to note that in every part of the book the necessary revisions and alterations appear to have been carefully carried out. The book contains, in addition to the list of Members of the Royal College of Veterinary Surgeons, copies of the Acts, Charters and By-laws by which the College is constituted and governed; lists of Presidents, Councillors, Examiners, and other office-bearers; and, in the Appendices, full information as to to Schools and Prizes, copies of the questions set at the Professional Examinations in all classes in 1912; Regulations for Admission to the Army Veterinary Corps, the Territorial Force, the Special Reserve, the Indian Civil Veterinary Department, and the Board of Agriculture. Useful extracts from Acts of Parliament affecting veterinary surgeons are given, and the Animals (Notification of Disease) Order of 1910 is set out in full. There is a complete list of Veterinary Associations, and a copy of the last Annual Report.

We notice that on page 307 a list is given of twenty-five members who have neglected to inform the Registrar of their change of address. These gentlemen run the risk of having their names struck off the rolls during 1913 under the operations of Section 5 (4) of the Act. We accordingly append the list in the hope that some of the members named, or their friends, may avert the catastrophe. On making inquiries we learn that less than 8 per cent. of the profession purchased copies of the Register in 1912, and this is no doubt one of the reasons why so many veterinary surgeons appear to be unaware of the distinction beteen the Royal Veterinary College and the Royal College of Veterinary Surgeons.

The Register is a book which should be in the hands of every veterinary surgeon.

ADDRESSES WANTED.

THE present addresses of the under-mentioned gentlemen are unknown. The statutory notices have been sent out by the Registrar, and unless an address is received during the year 1913 the names will not be included in the Register for 1914.

| *Name.* | *Last address known.* |
|---|---|
| Barclay, J. D. ... ... ... | Dunfermline, Fifeshire |
| Chisnall, W. G. ... ... | 105, Goodison Road, Liverpool |
| Davies, Arthur W. ... ... | Lennox, Taylor Co., Iowa, U.S.A. |
| Dixon, E. M. ... ... ... | High Street, Haslemere, Surrey (? now Canada) |
| Farrant, A. L. ... ... | 16, Hanover Crescent, Brighton |
| Fetherstonhaugh, H. H. .. | North Hermitage, Shrewsbury |
| Gilford, N. ... ... .. | East Grinstead, Sussex |
| Going, W. H. ... ... | Kansas, U.S.A. |
| Hart, James ... ... ... | Manchester, New Hampshire, U.S.A. |
| Langran, G. B. ... ... | Singapore |
| Lewis, W. J. ... ... ... | Streatham, London, S.W. |
| Lord, Roland A. ... ... | New Zealand |
| Macqueen, L. H. ... ... | Watrous, Sask., Canada |
| McRaith, R. H. ... ... | Perth, W. Australia |
| Rugg, F. G. ... ... ... | Nova Scotia |
| Selous, Bruce ... ... ... | Wednesbury, Staffs. |
| Sewell, A. V. W. ... ... | 95, High Road, Chiswick |
| Skaife, W. ... ... ... | California |
| Souter, E. S. ... ... ... | Shepard, Alberta, Canada |
| Thom, J. B. ... ... ... | Municipal Buildings, Liverpool |
| Tufts, S. R. ... ... ... | Main Street, Larne, Co. Antrim |
| Wand, E. H. ... ... ... | Southwell, Notts. |
| Weir, Robert ... ... ... | Edmonds, Burnaby, Vancouver, Canada |
| Woodroffe, H. A. ... ... | 61½ East 125th Street, New York, U.S.A. |
| Wyer, R. ... ... ... | Saxilby, Lincoln |

**Clinical Diagnostics.** By Dr. Bernard Malkmus, Director of the Clinic for Internal Diseases at the Royal Veterinary College of Hanover, Germany. Translated by Dr. D. S. White, Dean of the College of Veterinary Medicine, Ohio State University, and Dr. Paul Fischer, State Veterinarian of Ohio. Published by Alex. Eger, of Chicago. 15s. net.

The first German edition appeared in 1898, and the fourth in 1910. The latter was published in the English language in 1912. The book comprises about 250 pages of clearly printed matter, and many good illustrations. Much labour has undoubtedly been expended in its production, and no one can fail to benefit from a perusal of it.

The definition of the word "diagnosis" on page 11 does not appeal to one as being quite satisfactory; it runs as follows:

"Diagnosis is the art of determining internal changes of the body by the aid of externally visible or otherwise appreciable changes in the animal's condition or some of its organs." The term should not be limited so as to apply only to internal changes.

In referring to the stethoscope the author credits that instrument with being unreliable. In this respect he by no means stands alone, but after some years' constant use of a form of stethoscope, one cannot understand why so many take that view, unless it is because they throw the instrument aside without giving it a sufficient trial. If for six months every case were auscultated both by means of the aided and unaided ear, it is probable that few would rely on the unaided ear at the end of that time. After a little practice, the friction sounds caused by the animals' coats can be disregarded, and there is no need to apply oil or water to prevent them. On page 57, purpura hæmorrhagica in the horse is described as an acute infectious disease, while Hutyra and Marek, in their "Special Pathology," refer to the same condition as an "acute non-infectious disease," and probably most people will agree with the latter. In the paragraphs dealing with anthrax we fail to find mention of the methylene blue reaction; this should not have been omitted.

As a means of diagnosis in glanders, the extirpation of a lymphatic gland for examination is recommended; this may be an interesting process from a laboratory standpoint, but is unlikely to find favour in general practice. On page 164, constipation is said to be the principal symptom of colic. That statement is consistent with the definition of colic (page 35), which runs as follows: "Colic is a complex of symptoms in the horse characterized by abdominal pain and suppressed peristalsis." The term "colic" is so loosely applied, both among authors and practitioners, that it would appear to be a good plan to reserve it for conditions affecting the colon, or to drop it altogether in so far as it applies to abdominal pain. Under the same head in Finlay Dun we find the following: "Irregular inordinate contractions of muscular walls of intestines." Law, after indicating that the term colic is loosely applied to all abdominal pains, finds it necessary for the purposes of his work to use it for "abdominal pain without inflammation or any structural lesion." As used now the word "colic" has too indefinite a meaning and must lead to confusion.

The part of the work devoted to urinary affections is good, and no doubt many of us would act wisely if we paid more attention to the examination of urine. It would be interesting to know how the author attaches a vessel to the horse's sheath in order to collect urine. On page 220, parturient paresis (milk fever) is defined as "an acute auto-intoxication closely following the act of parturition, and characterized by cerebral paralysis." We hope the time may arrive when the real cause of the condition may be an ascertained fact. At present the above definition is perhaps good enough for the purpose of the work, but one must not overlook the fact that cases showing symptoms almost (if not absolutely) identical with those of milk fever may occur before calving, during the act of parturition, and in cows that

have calved several months before the symptoms evince themselves, and in addition they respond to the same treatment as the paresis closely following the act of parturition.

M. J.

**The Sheep and its Cousins.** By R. Lydekker, F.R.S. Published by Messrs. Geo. Allen and Co., Ltd.

This work is certain to command a well-deserved attention. It is the result of the energy of an authority already responsible for many books relating to animals, and contains 310 pages of clearly-printed matter, together with 61 useful illustrations. As a reason for its publication Mr. Lydekker states that no other modern book in the English language deals with the chief breeds of sheep in all parts of the world. The work is divided into fifteen chapters, the first of which deals with the names and early history of the sheep.

Chapter ii is devoted to the zoological position and structure of the sheep, and interesting descriptions of the distinguishing features of oxen, sheep and goats, and of the differences between tame and wild sheep are given.

The subject of sheep and goat hybrids is discussed in pp. 31-34, and the authority of Dr. Fitzinger is quoted for the statement that in many parts of Northern Russia domesticated sheep of the short-tailed and frequently four-horned breed are commonly crossed with goats, and that the resulting progeny are, in the main, perfectly fertile, although Mr. Lydekker points out that it is not mentioned whether this means *inter se*, or with one or both parents.

In connection with the sheep of the Faroes it is stated that they feed readily on animal substances—one of the greatest resources in some of the islands for keeping them, when no provender exists, is fish, which are dried on the rocky shores for that purpose.

In referring to merinos the fact that, unlike other sheep, they do not annually renew their fleeces, which will continue to grow for several successive years, is mentioned, and their unpopularity in Great Britain is ascribed to their slowness in reaching maturity, and to their being practically an exclusively wool-producing type.

The sheep of Tibet employed for the purpose of carrying salt and borax over the passes are said to be capable of carrying upwards of forty pounds of salt, done up in two leather bags, slung on either side, at the rate of twelve miles a day, with ease.

Much instructive matter appears in connection with the fat-tailed and fat-rumped sheep; the fat tails of some Persian sheep being from 20 to 40 lb. in weight, and the fat mass on the rumps of Somali sheep weigh about 25 lb.

An Armenian variety is provided with horns of great length; they may measure 40 in.

Chapter xv refers to extinct sheep, and with it terminates an exceedingly interesting book on "one of the most valuable and important of all domesticated animals."

## Translation.

### TWO CASES OF GENERAL PARALYSIS IN THE DOG.

By Dr. L. MARCHAND and Professor G. PETIT.
*Charenton.* *Alfort.*

We have already demonstrated the possible existence in the dog of an affection of nerve centres which is disclosed by symptoms of dementia—both motor and convulsive—very similar to those which characterize general paralysis in man. This affection is anatomically a diffuse and subacute meningeal encephalitis.

Our observations on three cases of this curious disorder have already been published. We have recently obtained data of two other instances which are important enough to be now reported.

*Case* 1.—A fox-terrier bitch, 15 months old, was brought for examination and treatment to the Alfort Veterinary School. It was placed under the care of Professor Coquot.

The owner said that this bitch had become gradually blind after an accident that had occurred at the age of 12 months. She had been rather severely knocked on the side of her head by a cyclist. She was not stunned by the blow at the time of the accident, and nothing abnormal was noticed immediately afterwards. There was never any appearance of an external wound; merely a splash of mud was to be seen, and no sign of any skull fracture could be perceived.

Since the accident, however, the character of the animal had changed. To begin with, it seemed less lively than before; then, little by little, it was seen to knock itself blunderingly against things. Day by day this trouble increased, until the owner concluded that the bitch had gone blind. Her eyelids no longer blinked, and she took no notice of any beckonings that were made even close up to her. Her eyes no longer followed the movements of the people around her.

Other symptoms presently supervened. The animal's walk became uncertain and tottering. Eventually she seemed to have become deaf; she no longer answered to her name; she did not even seem to hear the sound made by the ball with which she used to play when formerly it was thrown for her amusement by her mistress. The animal showed no pleasure when it was patted; it even seemed to be getting irritable. At last it did not recognize anybody and did not take notice of any other dogs. No circular movements were recorded. When the animal was left to itself it would remain motionless, paying no attention to anything that was going on around it. For some time its habits had become dirty, the excreta being dropped about anywhere, and it urinated frequently without wanting to go out. It never lost its ability to feed itself, and there was no need to put food especially under its nose.

It should be noted, as a possible early manifestation of the malady, that an attack of bronchitis, lasting a fortnight, had

preceded the accident above mentioned, and that the animal had also been suffering from a skin disease, for which medicated baths had been administered.

The patient's brothers and sisters were healthy. Its own health record was incomplete; nothing was known about it before the age of 5 months, when it was acquired by its late mistress.

On examination it was found that the skull was not injured. The eyes appeared normal, although it was noted that the dilatation and contraction of the pupils were sluggish, but there was no inequality, and no lesions were to be found inside the eyes when they were scrutinized by means of the ophthalmoscope.

An iodide treatment was prescribed, but no subsequent improvement was recorded. During the days that followed the animal only vegetated without any sensations. On November 24 it was destroyed by means of an intrapleural injection of sulphate of strychnine.

*The Post-mortem.*—This revealed no abnormality in the optic nerves and retina and no local cerebral lesions, but *the meninges had a milky aspect and were adherent to the cortex.* The organs of the thoracic and of the abdominal cavities were normal.

### The Histological Examination.

The following observations were recorded:—

(1) Of the Brain.—There were no lesions of the optic nerves and retina, therefore *the animal was not blind.* The cerebral pia-mater was infiltrated with embryonic cells scattered over the interior surface; it was closely adherent to the cortex; nuclei of inflammation were prevalent inside the convolutions. There was considerable inflammation round the arteries and veins (periarteritis and periphlebitis), and there were *lesions of diffused meningeal encephalitis* in the cortex.

It was particularly noticed that the amount of perivascularity was relatively greater than the meningeal lesions. The blood-vessels of the white matter were as much surrrounded with inflammation as those of the cortex. There were *cellular lesions* that consisted principally in eccentricity of the nuclei, the chromophile granules being preserved. There were numerous subsidiary cells. There was *superficial neurosclerosis* (hardening of the nerves), characterized by enormous arachnoid cells. There was *rarefaction of the tangential fibres* (connecting the sense of touch with the brain); and, finally, there were in the cortex a certain number of *hyaline corpuscles.* The search for microbes was negative.

(2) Of the Cerebellum.—Slight perivascularity in the white substance was observed, but no meningeal lesions.

(3) Of the Medulla.—There was slight sclerosis of the anterior pyramids, but no lesions in the cells of nerve centres.

According to the evidence, therefore, it was a case of meningeal encephalitis in the dog of traumatic origin; but though it had been presumably produced by a blow, it is probable (and such is often the case in human paralysis) that the illness existed before the accident occurred.

The animal did not avoid the bicycle because it could not, its faculty of attention being disordered. The slightness of the shock and the absence of acute cerebral symptoms directly after the accident point to this interpretation.

The mental trouble was shown in this animal by its state of stupor, which made it appear to be first blind, then deaf. This pseudo-blindness and pseudo-deafness resulted from loss of sensations in the patient, whose mental functions had been annihilated.

The diagnostic error seems to us of sufficient interest to be particularly noted.

*Case 2.*—The following observations have been reported to us by M. Pol Pierre, a veterinary surgeon of Paris, who watched his patient during the later stages of the disease. This distinguished practitioner's most correct diagnosis of *diffused subacute meningeal encephalitis* was made according to the investigations which we had previously published and with which he was acquainted.

The case was that of a bitch who was sister to her father, that is to say, the issue of a mother and son.

At 10 months old she had distemper of the pneumonic type. This appeared to have been completely cured.

The mental trouble began at the age of 16 months by effecting a change of character. The animal lost its former liveliness and left off gambolling. When called by its mistress it would throw itself awkwardly and heavily upon her. The movements were thus proved to be uncontrolled and out of proportion. Convulsive phenomena followed, exhibiting generalized concussion without loss of consciousness. The fits were infrequent, and occurred without any warning. The symptoms became rapidly worse. The animal soon showed great excitement. Its behaviour was absurd; for instance, it would rush at a wall, scratching it for hours with its paws, &c.

The mistress, fearing it was going mad, took it to Alfort School of Veterinary Medicine to be examined. The consultants sent it back four days afterwards, saying there was nothing to fear.

When the animal was 21 months old it was examined by M. Pol Pierre, who reports the following symptoms:—

The excitement (previously noted) had completely gone, the patient appeared to be rather in a state of stupefaction. Its walk was staggering. There was a tendency to fall over on the left side when the animal was induced to move. There were exaggerated patellar reflexes. There was no paralysis or muscular atrophy. Ability to feel pain was retained. The animal could see and hear. Its appetite was ravenous. Though it snarled it did not snap. At this stage there were no muscular spasms nor any tremblings.

The intelligence was considerably weakened. The patient did not move when called by name; it did not recognize its mistress, and, in fact, was quite indifferent to everybody. For a long time the animal had lost control of excretory and urinary functions.

All symptoms became still more acute as time went on. Death occurred at 22 months old.

THE POST-MORTEM.—This was conducted several hours after death. Nothing particularly transpired through the macroscopic examination of the brain, and of the thoracic and abdominal organs.

THE HISTOLOGICAL EXAMINATION.

1.—OF THE BRAIN.—*Inflammatory meningeal-cortical lesions* were manifested over the convex surface of the frontal lobes. They appear to have been identical with those that were noted in the previous case, the only peculiarity being that the perivascularity was less diffused, though the inflammation was very marked around certain blood-vessels. Similar neural and cellular lesions were present. There was also a similar degeneration of the tangential fibres (of touch), which had a granular aspect.

2.—OF THE CEREBELLUM.—Its examination disclosed *subacute meningitis of the pia-mater and diffused infiltration of the molecular layers.*

3.—OF THE MEDULLA.—In this organ there was marked perivascularity of certain interior blood-vessels. There were no cellular lesions.

4.—OF THE SPINAL MARROW.—In this there was slight localized infiltration of the pia-mater. There were no other lesions.

In our former publications we described the symptomatology of *general paralysis* in the dog, and we dwelt on the clinical resemblances of the same malady in canine and human subjects. The differences in the two affections can be accounted for by a consideration of the variations in the material on which they work, as well as in the dissimilarity of the respective virus of origin.

In the animals whose cases we have been studying meningeal encephalitis appears to have begun in two instances at the age of 18 months, and in the others at the ages of 16 and of 12 months respectively. In a fifth case we were unable to ascertain the exact age of the dog. It was reputed to be several years old.

In our experience the evolution of the disorder has always been rapid, and it has lasted a relatively short time. We have not been able to determine its precise duration, because many of our patients were destroyed before the affection had run its course. According to our still incomplete data, general paralysis in the dog lasts from eight months to a year.

When it is remembered that a dog's life is so much shorter than that of a man, and that maturity is reached so much earlier in the animal, considerable allowances will be made for the differences between the usual time of appearance and the duration of the canine and human varieties of general paralysis. There is really not so much difference in these respects as at first appears.

Anatomically the resemblances are more striking. It is true that macroscopically the lesions of general paralysis are not so evident in the dog as in man—the meningeal adhesions being comparatively unimportant in the dog—but microscopically the

diffused meningeal encephalitis in the dog is identical with that in man, so much so that every anatomical pathologist in possession of the facts would unhesitatingly pronounce our specimens to be those of general paralysis, the inherent peculiarities of the dog's cortex being, of course, taken into consideration.

In two cases we were able to discover hyaline corpuscles which have hitherto been supposed to belong only to certain cases of human general paralysis. The malady in the dog seems to supervene several months after an infectious disorder, *i.e.*, that of distemper, the virus of which is persistently penetrating. (Though still undetermined, the cause of distemper may with special significance be verified as a thread-like *spirillum*.)

We must admit a connection of cause and effect between canine distemper and meningeal encephalitis, and we consider that it is comparable to the relation between syphilis and human general paralysis. Still, many more facts are yet to be ascertained before this etiology can be accepted definitely. In any case, there is no denying the interest that is attached to the establishment of the fact that the dog is subject to a malady which is generally (and quite legitimately) attributed to syphilis in man.

Considered in the light of our researches in comparative pathology, meningeal encephalitis in man, notwithstanding its very definite lesions, cannot claim an absolutely exclusive monopoly of special characteristics.—*Recueil de Médicine Vétérinaire.*—Translated by I. S. C.

---

## Letters and Communications, &c.

Mr. Payne; Professor Liautard; Dr. A. Hughes; Mr. C. J. Dixson; Mr. W. M. Scott; Mr. G. Mayall; Capt. Deacon; Mr. A. E. Willett; Mr. T. B. Goodall; Mr. J. F. D. Tutt; Capt. Pallin; Mr. Mitter; Professor Sisson; Professor Craig.

---

## Books and Periodicals, &c., Received.

The American Veterinary Review; Journal of the Royal Army Medical Corps; Recueil de Médecine Vétérinaire; L'Hygiène de la Viande et du Lait; Revue Générale de Médecine Vétérinaire; Der Tierarzt; Zeitschrift für Veterinärkunde; Berliner tierärztliche Wochenschrift; Osterreichische Wochenschrift für Tierheilkunde; La Clinica Veterinaria; Revista de Medicina Veterinaria; Board of Agriculture and Fisheries; Department of Agriculture and Technical Instruction for Ireland; Kennel Gazette; Agricultural Journals for the Union of South Africa and for Rhodesia; American Journal of Veterinary Medicine.

---

NOTE.—All communications should be addressed to 8, Henrietta Street, Covent Garden, London, W.C. Telephone, 4646 Gerrard. Telegrams, "Baillière, London."

Letters for the JOURNAL, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements) should be addressed to the Editors.

Manuscript—preferably type-written—should be on one side only of paper, marked with full name of author.

Illustrations for reproduction should be in good black or dark brown on white paper or card.

Advertisements and all business matters relating to the JOURNAL should be addressed to the publishers, Messrs. Baillière, Tindall and Cox.